MEDICAL TIMES

Vol. 78 August 1950 No. 8

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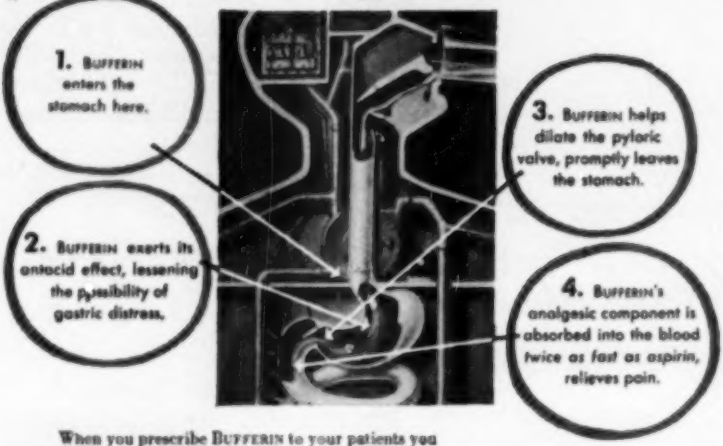

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*Overman, W. J.; Gordon, W. N., and Burch, G. E.: Tracer Studies of the Urinary Excretion of Radioactive Mercury following administration of a Mercurial Diuretic, Circulation *1*:496, 1950.

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REFERENCES:

(1) Rosenblum, G. and Melinkoff, E. Preservation of the Threatened Pregnancy with Particular Reference to the Use of Diethylstilbestrol. West. Jr. Surg. Obs. and Gyn. 55, 597-603. Nov. 1947.

(2) Silbernagel, W. M. and Burt, O. P. Ohio State Med. Jr. 39, 430, May 1943.

(3) Karnaky, K. J. Estrogenic Tolerance in Pregnant Women. Amer. Jr. Obs. and Gyn. 53, 312-316. 1947.

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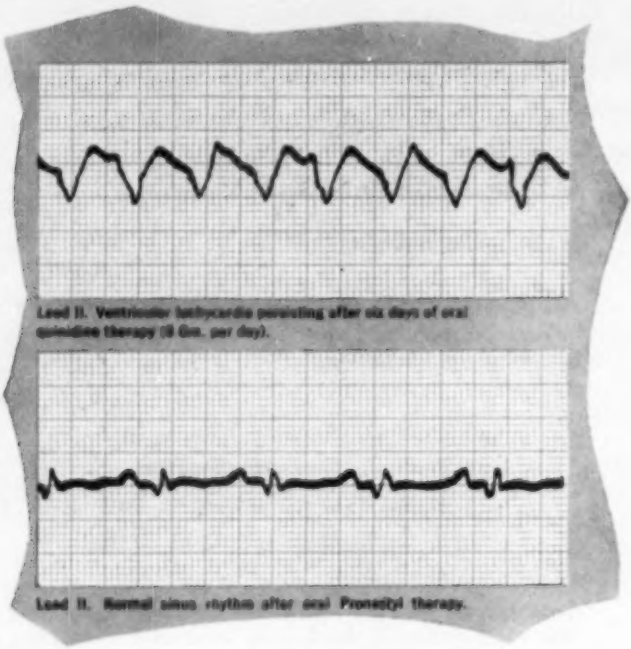

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SUPPLIED: Bottles containing 120, 500, and 1,000 enteric-coated tablets; each tablet 0.25 Gm. Literature and samples on request.

1. Wilhelm, S. P., et al.: J.A.M.A. 141: 837 (Nov. 19) 1949.

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1. Walker, W. J.: Obesity as a Problem in Preventive Medicine, U.S. Armed Forces M.J. 1:393, 1950.

2. John, H.J.: Dietary Invalidism, Ann. Int. Med. 32:595, 1950.

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2. POST-FORMULA BOTTLE FEEDING becomes a problem when impatient mothers take their babies off formula too soon – or change to a form of milk that's less nourishing, less uniform, less digestible. For your own protection, *insist* upon baby's bottle *continuing* to contain all the advantages of Carnation's tested uniformity – in butterfat, milk solids, curd tension and viscosity.

3. THE CHANGE TO CUP-DRINKING is a difficult transition for baby at best. And the weaning problem is unnecessarily complicated if the milk in the cup is different in any way from that fed in the bottle. Experience shows that Carnation's familiar flavor aids acceptance of cup-drinking... while its constant uniformity helps eliminate the digestive upsets so often caused by radical changes in baby's routine.

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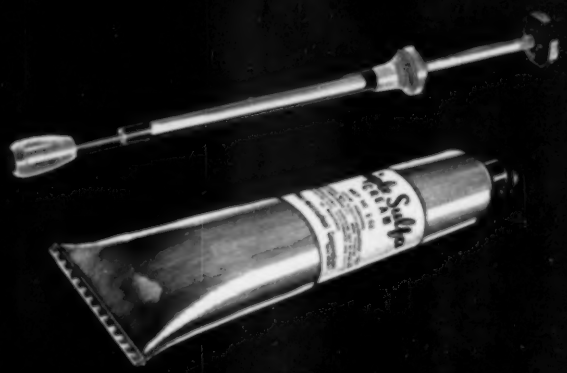

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1. Brinck, G., Steinberg, P. and Merendino, J. Y.: Am. J. Obst. & Gynec. 58:176, 1949. 2. Marbach, A. H.: Am. J. Obst. & Gynec. 55:511, 1948.

*Sulfathiazole, N-acetylsulfanilamide, N-benzoylsulfanilamide

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[1]Modern Med. Topics, 10:7, July, '49

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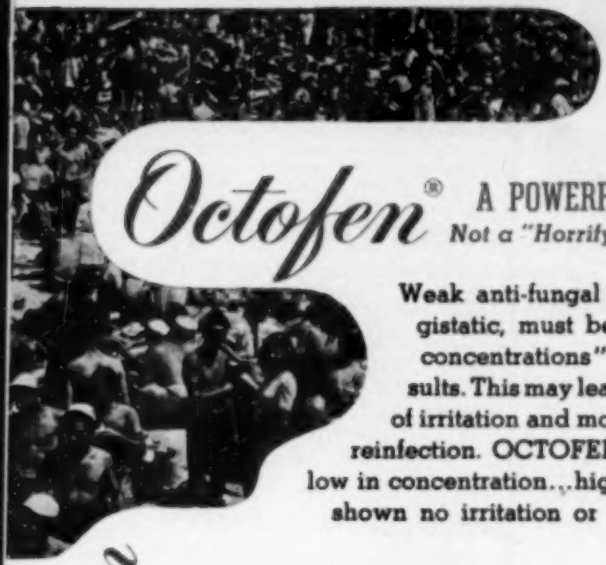

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***Oster, K. A. & Golden, M. J.: Alcohol Soluble Fungistatic and Fungicidal Compound, A. J. Pharm. 121:378 (Oct.) 1949**

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LETTERS

TO THE EDITOR

This department is offered as an Open Forum for the discussion of topical medical issues. All letters must be signed. However, to protect the identity of writers, who are invited to comment on controversial subjects, names will be omitted when requested.

SHORTAGE OF DOCTORS

"It is amusing to read about the shortage of doctors. I believe if a poll was taken among doctors, one would find it not so. True, there must be many locations void of doctors, but I believe that those environments are incapable of supporting a professional man economically."

Earl J. Wylie, M.D.
Watertown, Mass.

USE OF RABIES VACCINE

"THE NEW YORK TIMES reported recently that a patrolman was thrown over the handlebars of his motorcycle, and an 83-year-old woman was injured in an accident. The patrolman was rushing rabies 'serum' to a Sea Cliff, L. I., resident who had been bitten by a dog.

"A dog which suffers from rabies becomes dangerous only a few days before death; the reason is that the virus of this disease appears in the saliva, in the mouth of the infected dog, only five or six days before the animal dies. In other words, when an infected dog bites, transmission of the virus occurs only if the dog dies with symptoms of rabies, such as paralysis of the legs, etc., a few days later. If the dog remains alive for ten or twelve days after the incident, no vaccination is necessary.

"It is usually safe to wait a period of time with the vaccination because in most instances the virus of rabies is introduced, through the dog's bite, into the human leg. More dangerous are cases where the in-

—Continued on page 26a

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meets or exceeds every requirement of the Advisory Committee on Contraceptives of the American Medical Association. It is never advertised to the laity and is suggested for use only under the guidance of the physician.

The crystal clarity, agreeable odor, and elegant appearance of "RAMSES"* Vaginal Jelly† make it esthetically acceptable even to the most fastidious patients. As it is nonirritating, nonstaining, and nontoxic, no untoward effects follow its use.

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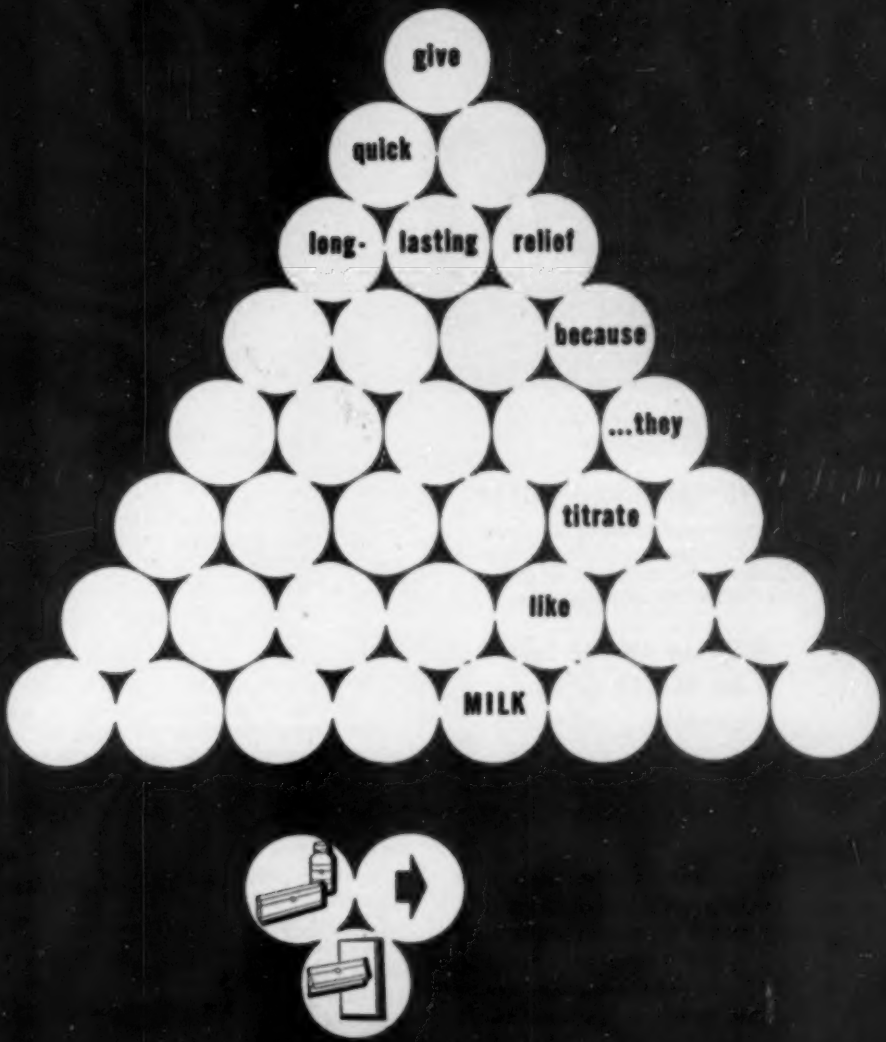

give
quick
long-
lasting
relief
because
...they
titrate
like
MILK

LETTERS

continued

from page 22a

fected dog has bitten someone on the face; in these instances, vaccination must be performed promptly; there is no time to wait and observe the dog.

"If the dog was a stray animal that ran away after the incident and could not be observed, and if there is a possibility that the dog might have been infected, then, of course, vaccination may be necessary just as a precautionary measure. In these instances again, however, one day or two of delay in the administration of the vaccine would not usually represent any risk, except when the face was infected.

"It is clear that, with rare exceptions, there is no need for an emergency delivery of the rabies vaccine to someone who has been bitten by a dog."

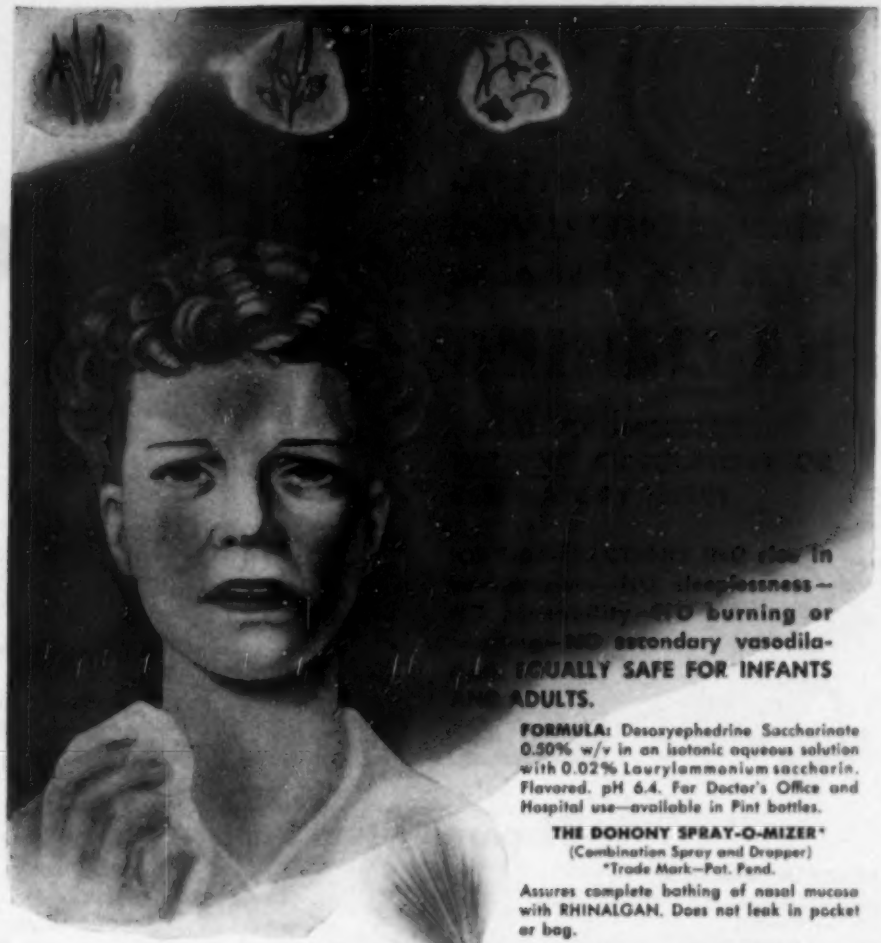
Ludwik Gross, M.D.
New York, N. Y.

"A recent news article in THE NEW YORK TIMES described the opening of a diagnostic clinic by the New York Hospital. Its editorial shortly thereafter extolled the virtues of such a diagnostic set-up.

"This clinic was represented as a 'non-profit diagnostic clinic for private ambulatory patients of all income levels.' It was further represented that this clinic has no 'upper financial levels' and provides a 'dignified but not large payment to the physician.' Patients may come here on their own for diagnosis 'if they do not have a doctor.' To my mind the type of clinic as described constitutes an imposition upon the physicians of New York City.

"The clinic claims to be 'non-profit'—an obvious misrepresentation. Do not the fees collected from these private patients represent profit to the clinic, to the hospital and to the physicians involved?

—Continued on page 44a



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...burning or
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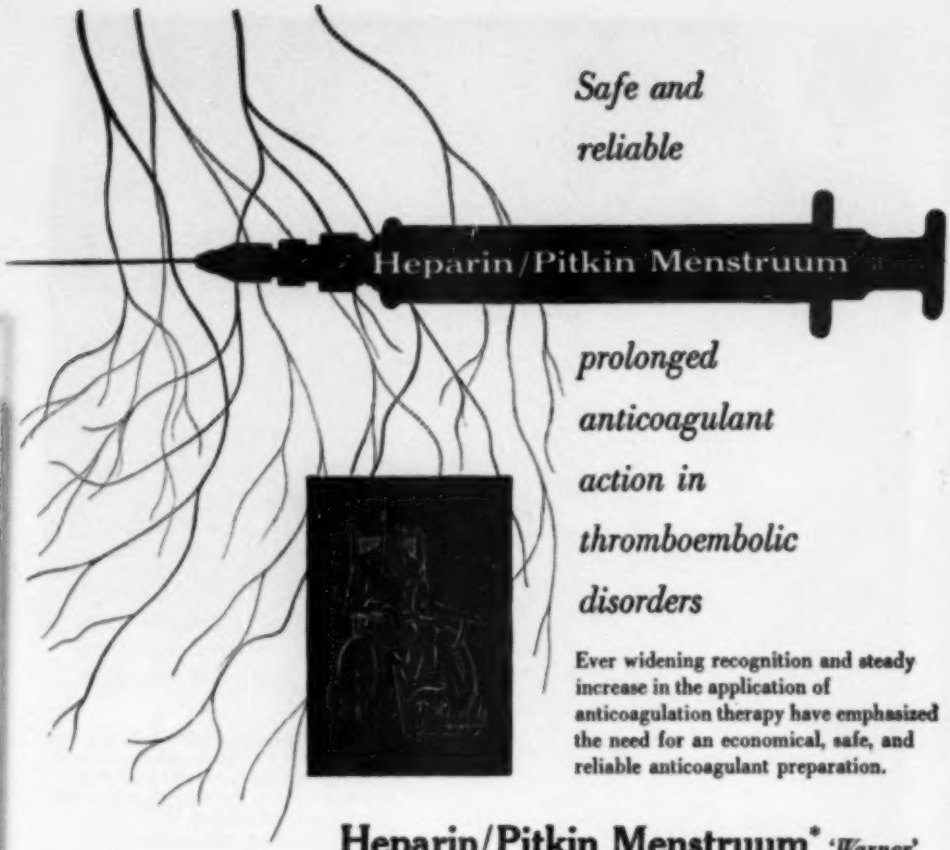


Safe and reliable

prolonged anticoagulant action in thromboembolic disorders

Ever widening recognition and steady increase in the application of anticoagulation therapy have emphasized the need for an economical, safe, and reliable anticoagulant preparation.

Heparin/Pitkin Menstruum* *'Warner'*

PACKAGE INFORMATION:

Heparin/Pitkin Menstruum ***'Warner' (plain)***
without Vasoconstrictors
Cartons, 1 and 6 ampuls each
2-cc ampuls, each containing 200 mg heparin sodium salt
3-cc ampuls, each containing 300 mg heparin sodium salt

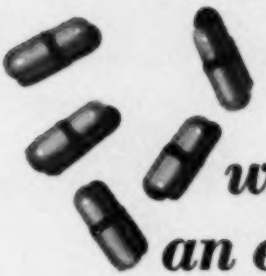
Heparin/Pitkin Menstruum ***'Warner'***
with Vasoconstrictors
Cartons, 1 and 6 ampuls each
2-cc ampuls, each containing 200 mg heparin sodium salt with vasoconstrictors**
3-cc ampuls, each containing 300 mg heparin sodium salt with vasoconstrictors***
**Each cc of the Menstruum contains 12.5 mg of ephedrine sulfate and 0.5 mg. of epinephrine hydrochloride
***Each cc of the Menstruum contains 8.3 mg of ephedrine sulfate and 0.33 mg of epinephrine hydrochloride

References: (1) Loewe, L., Hirsch, E., Graynel, D.M., and Kashdan, V.: Experimental Study of the Comparative Action of Heparin and Dicumarol on the *In Vitro* Clot, *J. Lab. Clin. Med.*, 33:721, 1948.
(2) Evans, J.A., and Dee, J.F.: Anticoagulant Treatment of Postoperative Venous Thrombosis and Pulmonary Embolism, *New Eng. J. M.*, 238:1, 1948.

provides the means for prolonged anticoagulation action which affords "... consistently satisfactory results."[1] HEPARIN/PITKIN MENSTRUUM* 'Warner' inaugurated a new era in the preventive and therapeutic use of heparin in thromboembolic disorders, venous and arterial.

Evans and Dee[2] comment that "... the advent of heparin in Pitkin menstruum will popularize anticoagulant therapy as a safe and reliable method of treatment."

William R. Warner & Co., Inc.
New York Los Angeles St. Louis



with an eye to the patient's future

To safeguard hypertensive, diabetic and certain other patients, RUCON KAPSEALS afford strategic and safe prophylaxis against capillary bleeding. The ever-present threat of vascular accident is minimized by combatting increased capillary fragility.

RUCON*

KAPSEALS*

RUCON KAPSEALS give three-fold protection to patients with increased capillary fragility associated with hypertension, diabetes mellitus, pulmonary hemorrhage, retinal hemorrhage, hereditary hemorrhagic telangiectasia, thiocyanate therapy, ascorbic acid deficiency and drug sensitivity. Rutin increases capillary strength, vitamin C maintains intercellular substance and integrity of capillary endothelium, and calcium aids the coagulation process.

Each RUCON Kapseal contains:

Rutin	100 mg.
Vitamin C (Ascorbic Acid)	100 mg.
Dicalcium Phosphate Anhydrous	400 mg.

DOSAGE: One RUCON Kapseal daily may be given initially, to be increased in accordance with therapeutic requirements. In some patients dosages of 300 mg. daily of rutin (3 RUCON Kapseals) may be required to secure adequate response. The Göthlin Petechial Index, determined prior to instituting therapy and repeated frequently during treatment, may be helpful as a guide to therapy.

RUCON Kapseals are supplied in bottles of 100.

*Trade Mark

PARKE, DAVIS & COMPANY

immediate relief within hours itching, burning halted; within 3 to 6 days discharge ceases.

speedy recovery 2 to 7 WEEKS average in vaginitis; within 5 weeks in cervicitis (postoperative)

westhiazole vaginal embodies every proven modern requirement for rapid control of infective vaginitis and cervicitis ..great buffering capacity • rapid restoration of normal vaginal pH • carbohydrates for growth of friendly Doderlein bacilli • control of secondary as well as primary infections to accelerate healing. There is nothing more...

effective, simple, dainty, convenient in

vaginitis and cervicitis

VAGINITIS
CERVICITIS

westhiazole vaginal

single • dose applicators

WESTHIAZOLE VAGINAL: a sterile jelly containing 10% SULFATHIAZOLE, 4% UREA, 3% LACTIC ACID, 1% ACETIC ACID in a polyethylene glycol base. Non-irritant, non-toxic.

Samples and literature on request

WESTWOOD PHARMACEUTICALS

Division of Foster-Milburn Co. • 468 Dewitt St., Buffalo 13, N. Y.

2 to 3 cc. KOAGAMIN®

PREOPERATIVELY—2 to 3 cc. of KOAGAMIN—prevents oozing, allows the surgeon a clearer field of operation and reduces the need for local hemostatic measures.

POSTOPERATIVELY—2 to 3 cc. of KOAGAMIN—aids control of secondary bleeding.

THERAPEUTICALLY—2 to 3 cc. of KOAGAMIN—aids in control of bleeding in gastric and duodenal ulcers, hematemesis, hematuria, hemorrhagic purpura, epistaxis, blood dyscrasias, etc.

KOAGAMIN's prompt action—a matter of minutes—differs from that of vitamin K, which must first be converted to prothrombin in the liver—a matter of hours. Vitamin K is useful *only* in cases where prolonged prothrombin time is a factor. *Even in these cases,* KOAGAMIN should also be used for its rapid action.

Supplied in 10 cc. diaphragm-stoppered vials.
Write for comprehensive dosage chart and literature.

Chatham

CHATHAM PHARMACEUTICALS, INC.
NEWARK 2, NEW JERSEY, U. S. A.

Available Through Your Physician's Supply House or Pharmacist

Modern MEDICINALS

Physicians will find that these brief resumes of essential information relative to the newer products are so prepared that they may be removed and pasted on standard 3x5" file cards, and filed as illustrated in the adjoining picture, for ready reference.

Sylamin Cream

8-50

MANUFACTURER: Abbott Laboratories, North Chicago, Illinois.

INDICATIONS: In the treatment of tinea capitis, ringworm of the scalp.

ACTIVE CONSTITUENTS: 5 per cent salicylanilide and 1.25 per cent octriphenate (octyltrimethylammonium pentachlorophenate) in a water-soluble base.

DOSAGE: Clip the hair over the affected areas. Wash the scalp with soap and water before each treatment. Rub the ointment into the scalp for five minutes each day. In one series the average number of treatments per patient was 50; in another 36. Precautions should be taken against reinfection from hats, backs of chairs, barber instruments and bedding. Kerion with mild papular eruption has occurred in some cases during the administration of this preparation. Should this develop, the medication should be temporarily discontinued and a bland ointment or lotion substituted.

HOW SUPPLIED: In 1-oz. and 1-lb. jars.

Feojectin

8-50

MANUFACTURER: Smith, Kline and French Laboratories, 1530 Spring Garden Street, Philadelphia 1, Pa.

INDICATIONS: Intended for use in those cases of iron-deficiency anemia in which oral medication (1) is relatively ineffective, (2) is not well tolerated, or (3) produces results too slowly. Feojectin is particularly indicated for: resistant hypochromic anemias; anemia in pregnancy; anemia in gastro-intestinal diseases—where oral iron exacerbates symptoms such as diarrhea, e.g., ulcerative colitis, diverticulosis; anemia in menorrhagia or metrorrhagia; anemia in bleeding hemorrhoids; anemia in nutritional deficiencies.

ACTIVE CONSTITUENTS: Each 5 cc. ampul of Feojectin contains the equivalent of 100 mg. of elemental iron.

DOSAGE: As indicated. As is true with any intravenous medication, caution should be exercised with cardiovascular patients.

HOW SUPPLIED: In boxes of six 5 cc. ampuls.

Procaine Penicillin G Aqueous Suspension

8-50

MANUFACTURER: Schering Corporation, Bloomfield, N. J.

INDICATIONS: Pneumococcic, streptococcic, staphylococcic and gonococcic infections, syphilis, and the prophylaxis of infection.

ACTIVE CONSTITUENT: The procaine salt of penicillin-G consisting of one molecule of penicillin-G combined with one molecule of procaine base. Sterile and stable suspension, ready for immediate use. Each cc. of aqueous suspension contains 300,000 units.

DOSAGE: Administered by deep intramuscular injection—never intravenously. Before injection, aspirate to make certain that needle has not entered a vessel. When multiple injections are required, different sites of injections should be selected. A single injection of 1 cc. will, in most patients, provide blood levels well above minimum therapeutic requirements for 24 hours or longer.

HOW SUPPLIED: 10 cc. multiple dose vials (300,000 units per cc.), boxes of 1 vial.

—Continued on page 34a

SIMPLE TEST PROVES *INSTANTLY* PHILIP MORRIS ARE LESS IRRITATING

*Now you can confirm for yourself, Doctor, the results of the published studies**

HERE IS ALL YOU DO

1 . . . light up a PHILIP MORRIS

Take a puff—DON'T INHALE. Just s-l-o-w-l-y let the smoke come through your nose. AND NOW . . .

2 . . . light up your present brand

DON'T INHALE. Just take a puff and s-l-o-w-l-y let the smoke come through your nose. Notice that bite, that sting? Quite a difference from PHILIP MORRIS!

With proof so conclusive . . . with your own *personal experience* added to the published studies* . . . would it not be good practice to suggest PHILIP MORRIS to your patients who smoke?

PHILIP MORRIS

Philip Morris & Co., Ltd., Inc., 100 Park Avenue, New York 17, N. Y.

*Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245; *N. Y. State Journ. Med., Vol. 35, 6-1-35, No. 11, 590-592; Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154; Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60*

—Continued from page 32a

Amrulal Tablets

8-50

MANUFACTURER: Bio-Ramo Drug Company, Inc., Baltimore 1, Md.

INDICATIONS: Cardiac stimulation, mild sedation, diuresis and prophylaxis of capillary fragility in hypertension.

ACTIVE CONSTITUENTS: Aminophyllin, 1½ grains; rutin, 15 milligrams; and phenobarbital, ⅛ grain.

DOSAGE: One or two tablets two or three times daily provide aminophyllin-rutin benefits without undue phenobarbital intake. Extended periods of therapy may safely be directed with the tablets.

HOW SUPPLIED: In bottles of 100 tablets.

Aleudrin Hydrochloride Tablets

8-50

MANUFACTURER: The National Drug Company, Philadelphia 44, Pa.

INDICATIONS: For the symptomatic treatment of bronchial asthma.

ACTIVE CONSTITUENT: Aleudrin hydrochloride (isopropylarterenol), 10 mg.

DOSAGE: One tablet allowed to dissolve slowly under the tongue is recommended as the initial trial dose. In some patients, one and a half tablets may be required; rarely, two tablets are necessary.

HOW SUPPLIED: In bottles of 50 and 500 tablets.

Cellothyl Grenules

8-50

MANUFACTURER: Chilcott Laboratories, Division of The Maltine Company, Morris Plains, New Jersey.

INDICATIONS: Introduced especially for pediatric practice. Where patient-preferred or medically indicated, the granules also will be used for adults. Particularly effective in the correction of obstinate constipation conditions where other established regimens had all failed. It has also been found to be useful in the treatment of many forms of diarrhea and is widely used under post-operative conditions when normal functioning of the gastro-intestinal tract is disturbed.

ACTIVE CONSTITUENTS: A methylcellulose bulk laxative, in granule form.

DOSAGE: Cellothyl Granules, which are tasteless, can be administered sprinkled over solid food, cereal or vegetable. If preferred, Cellothyl Granuls may be taken in liquid form, mixed with water, milk, fruit juice or other liquid. When taken with food, granular Cellothyl does not produce bulk until after passing through the stomach and in no way interferes with digestion or vitamin absorption.

HOW SUPPLIED: 25 Gm. $6.40 per dozen list price, retail fair trade price $.79 each; 100 Gm. list price $1.67 each, retail fair trade price $2.47 each.

Dodex Drops with Ferrous Gluconate

8-50

MANUFACTURER: Organon, Inc., Orange, New Jersey.

INDICATIONS: For the regeneration of blood in anemias due to a lack of iron or a nutritional deficiency of vitamin B_{12}.

ACTIVE CONSTITUENTS: A combination package of two 15-cc. vials, one containing vitamin B_{12} (10 micrograms per cc.), the other containing ferrous gluconate (218 mg. per cc. —the equivalent of 25 mg. of iron.).

DOSAGE: Just a few drops of each ingredient added to the infant's water, milk, fruit juices, soup, or other liquid or semi-liquid food—or to the formula immediately before feeding—will usually suffice. The dosage varies with the age of the child, ranging between 3 drops from each vial once or twice a day for infants aged 3 months, to 10 to 20 drops from each vial once or twice a day for children 2 years of age or older.

HOW SUPPLIED: Combination package of two 15-cc. vials, one of B_{12} and the other of ferrous gluconate, each with an indiviudal dropper: drug trade price, $1.20; fair trade minimum, $1.80.

—Continued on page 36a

Abstract from Gastroenterology
Vol. 12, No. 4, October 1949

A METHOD OF IMPROVING FUNCTION OF THE BOWEL

J. ARNOLD BARGEN, M.D.,
Division of Medicine, Mayo Clinic, Rochester, Minnesota

Constipation, probably the commonest of physical complaints, may be caused by several factors, singly or combined: *1.* nervous fatigue and nervous tension; *2.* improper intake of fluid; *3.* improper dietary habits; *4.* failure to heed the call to stool; *5.* lack of exercise, and *6.* excessive use of laxatives.

It would seem logical that correction of constipation lies in the suitable adjustment of these factors.

Any diet for relief of constipation must supply material which has limited absorption in the small intestines and which adds bulk in the colon, i.e., fruits and vegetables. Daily fluid intake, from 2.5 to 3.5 liters, is highly important. Since many people find it difficult to eat enough dietary bulk, the trend recently has been toward hydrophilous colloids.

A search was made for such a colloid, for oral use, which has little or no effect in the stomach and small intestines. Methylcellulose, appropriately prepared as Cellothyl tablets, seems to answer these criteria.

A large number of patients received 4 tablets every 4 hours, with subsequent relief of constipation. These patients had no ordinary form of constipation; they had taken quantities, or as some said, "barrels of laxatives." In the following cases of obstinate constipation of long duration, a striking change for the better followed the use of this preparation, as part of a program of general medical care:

RESULTS OF TREATMENT

Case 1. Woman, age 57.—Obstinate constipation since early childhood. *After treatment:* Complete relief. She continued to pass normal, soft formed stools.

Case 2. Nun, age 69.—Obstinate constipation of lifelong duration. *After treatment:* In about a week . . . soft stools.

Cas. 3. Man, age 44.—Constipated many years; severe diabetes. *After treatment:* Normal stools at the end of one week.

Case 4. Woman, age 62.—Very difficult evacuation after carcinoma removal. *After treatment:* She passed her stools without discomfort.

Case 5. Woman, age 19.—Obstinate constipation; she had taken a laxative almost daily since early childhood. *After treatment:* At the end of two weeks she was passing stools daily.

COMMENT

Function of the bowel can be greatly improved by the addition of methylcellulose, appropriately prepared (Cellothyl). It represents a valuable addition to the well-ordered program of medical care.

 —Continued from page 34a

Caladryl

8-50

MANUFACTURER: Parke, Davis and Company, Detroit 32, Mich.

INDICATIONS: An effective means of combating many of the various types of itching and burning sensations experienced during the summer, such as those caused by sunburn, windburn, hives, poison ivy, poison oak, insect bites, bee stings, and other minor skin irritations. Rashes, such as diaper rash, cosmetic rash, and prickly heat, offer other opportunities for its application.

ACTIVE CONSTITUENTS: An easy to apply, slightly perfumed, light flesh colored, pharmaceutical preparation containing 1 per cent of Benadryl hydrochloride in a calamine-lotion type vehicle, with camphor and glycerin.

DOSAGE: Applied locally.

HOW SUPPLIED: In a convenient six-ounce bottle.

Empirol

8-50

MANUFACTURER: Burroughs Wellcome and Co., Inc., Tuckahoe, N. Y.

INDICATIONS: For the relief of pain which interferes with rest and sleep and for allaying anxiety generated by pain itself.

ACTIVE CONSTITUENTS: Phenobarbital, gr. ¼; acetophenetidin, gr. 2½; and acetylsalicylic acid, gr. 3½.

DOSAGE: As indicated.

HOW SUPPLIED: In bottles of 100 and 1000.

Supplamin Ferrous

8-50

MANUFACTURER: Ayerst, McKenna and Harrison, Ltd., 22 E. 40th St., New York 16, N. Y.

INDICATIONS: During pregnancy and lactation, childhood and adolescence; to promote rapid healing of wounds and fractures and as a supporting measure in tuberculosis when iron is required in addition to essential vitamins and other minerals as contained in the above formula.

Maternal diet and outcome of pregnancy are closely related. A high incidence of abortions, premature births, stillbirths, and neonatal deaths has been noted in pregnant women on deficient diets. Patients whose nutritional status is adequate prove to be "better obstetric risks."

ACTIVE CONSTITUENTS: Each capsule provides: Vitamin A, 3,200 U.S.P. Units; Carotene equivalent to 800 U.S.P. Units of vitamin A activity; Vitamin D, 400 U.S.P. Units; Vitamin C (ascorbic acid), 30 mg.; Ferrous sulfate (exsiccated), 194 mg. (3 gr.); and Calcium phosphate, dibasic, 560 mg. (8.6 gr.).

DOSAGE: As a dietary supplement, 1 to 3 capsules daily, or as directed by the physician. Supplamin Ferrous should be taken preferably with or immediately before food.

HOW SUPPLIED: In bottles of 100 soluble elastic capsules.

Carmethose-Trasentine

8-50

MANUFACTURER: Ciba Pharmaceutical Products, Inc., Summit, N. J.

INDICATIONS: Provides relief of gastric discomfort and pain in cases where there is high acidity, hypermotility and spasm in connection with peptic ulcer, gastric neuroses, simple gastritis and other forms of gastric dysfunction.

ACTIVE CONSTITUENTS: Each tablet contains: 225 mg. of Carmethose (sodium carboxymethyl-cellulose); 75 mg. of magnesium oxide; and 25 mg. of Trasentine (brand of adiphenine).

DOSAGE: 2 to 4 tablets of Carmethose-Trasentine should be taken 4 to 6 times a day, spaced between meals to coincide with the supposed peak of gastric acidity and at bedtime. The tablets should be taken with a glass of water or milk and should NOT be chewed. To relieve night pain, 2 tablets should be taken during the night.

HOW SUPPLIED: Bottles of 100 tablets.

for "This wormy world"

Diphenan

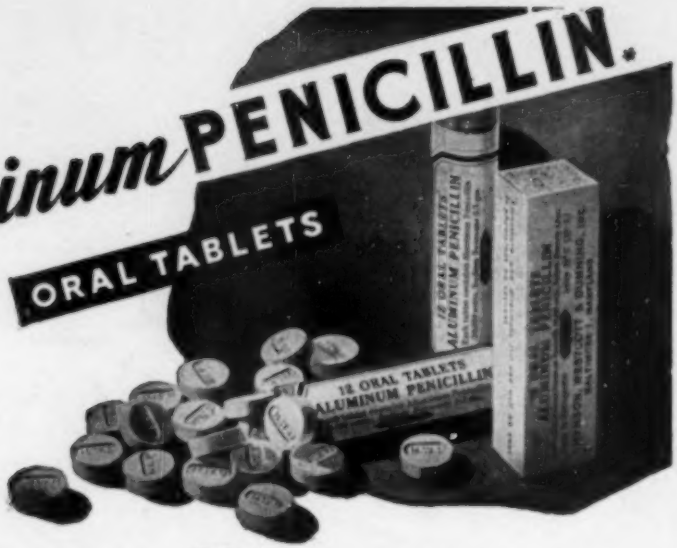
209 MILLION persons act as hosts to Oxyuris (Enterobius) vermicularis according to Stoll's fascinating article "This Wormy World".[1] This undesirable tenancy can be terminated with the aid of 'Tabloid' brand Diphenan, by mouth, for Diphenan kills the worms by direct action on the parasite.

Since these worms make no distinction as to age or social status—Diphenan's palatability, safety and economy are important considerations. One or two products t.i.d. for adults; ¼ of a product t.i.d. for children up to 3; ½ t.i.d. for children up to 10, and 1 t.i.d. for older children. 'Tabloid' brand Diphenan is supplied as wintergreen-flavored chewing wafers of 0.5 grams each in bottles of 20.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., TUCKAHOE 7, N.Y.

1. Stoll, Norman R.: Jol. of Parasitology 33:1 No. 1 (Feb.) 1947.

Aluminum PENICILLIN.



Greater effectiveness

Oral therapy with Aluminum Penicillin has proved to be effective in fulminating infections such as pneumonia[1] and in other infections due to streptococci, staphylococci and gonococci.[2] It rarely causes gastric disturbance or allergic reactions. The patient's bodily and mental comfort is improved because the necessity for frequent injections is eliminated.

The unique advantages of Aluminum Penicillin are that it is not soluble in solutions of acidity corresponding to that of gastric secretion, but is gradually converted into a readily absorbed form in the intestinal tract. These factors provide for maximum utilization of the dosage administered, higher and more prolonged blood levels.[3]

Sodium benzoate is added because it inhibits the destructive action of intestinal enzymes.[4]

Oral Tablets

Each tablet contains: Aluminum Penicillin, 50,000 units; sodium benzoate, 0.3 gram. Supplied in vials of 12 tablets.

[1]Terry, L. L. and Friedman, M. The Military Surgeon, Vol. 103, No. 5, November, 1948.
[2]Friedman, M. and Terry, L. L. Southern Medical Journal, Vol. 42, No. 6, June, 1949.
[3]Bohls, S. W. and Cook, E. B. M. Texas State Journal of Medicine, Vol. 41, November, 1945, p. 342.
[4]Reid, R. D., Felton, L. C. and Pitroff, M. A. Pro. Soc. for Exp. Biol. and Med., Vol. 63, 1946, p. 438.

* Patent applied for.

HYNSON, WESTCOTT & DUNNING, INC.
Baltimore, Maryland

Specific for

vaginal trichomoniasis

"All patients became symptom-free and bacteriologically negative..."[1]

Now effective in

moniliasis

"Symptomatic cure was effected in about 80% and mycologic cure in about 50%..."[2]

DUAL INFESTATION

AVC IMPROVED

ALLANTOMIDE VAGINAL CREAM with 9-Aminoacridine

MONILIA

TRICHOMONAS

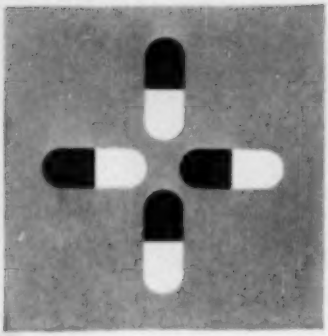
AVC (Allantomide Vaginal Cream) has long been accepted by clinicians as specific for the treatment of vaginal trichomoniasis. Investigators have unanimously reported it effective in 98-100% of cases.[3] With the addition of 9-aminoacridine, a new, potent antiseptic agent, AVC IMPROVED is capable of effecting mycologic cure in moniliasis.[2] Thus, AVC IMPROVED may be expected to provide relief in those stubborn cases of vaginitis which are due to mixed infections.

Available in 4 oz. tubes, with or without plastic applicator.

1. Horoschak, A., and Horoschak, S.: Jl. Med. Soc. N. J., 43:92. Mar., 1946.
2. Dill, L. V. & Martin, S. S.: Med. Ann. Dist. Col., 17:389, July, 1948.
3. Cacciarelli, R. A.: Jl. Med. Soc. N. J., 46:87, Feb., 1949.

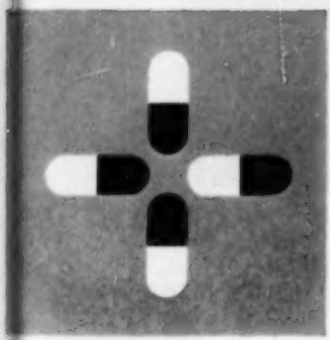
The National Drug Company **Philadelphia 44, Pa.**

More than Half a Century of Service to the Medical Profession

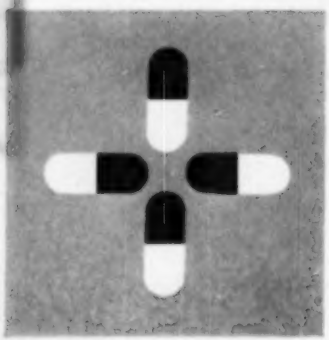


the ideal single preparation for ill-defined secondary anemias

Feosol Plus



Feosol Plus combines—in a carefully balanced formula—ferrous sulfate (grain for grain the most effective form of iron), liver, and seven other factors essential to optimal production of red blood cells. It is, therefore, most useful for the treatment of those ill-defined secondary anemias which resist treatment with iron alone.



Look what each capsule contains!

Ferrous sulfate, exsiccated	200.0 mg.
Desiccated liver, N.F.	325.0 mg.
Folic acid	0.4 mg.
Thiamine hydrochloride (B_1)	2.0 mg.
Riboflavin (B_2)	2.0 mg.
Nicotinic acid (Niacin)	10.0 mg.
Pyridoxine hydrochloride (B_6)	1.0 mg.
Ascorbic acid (C)	50.0 mg.
Pantothenic acid	2.0 mg.

Dosage—3 capsules daily, one after each meal

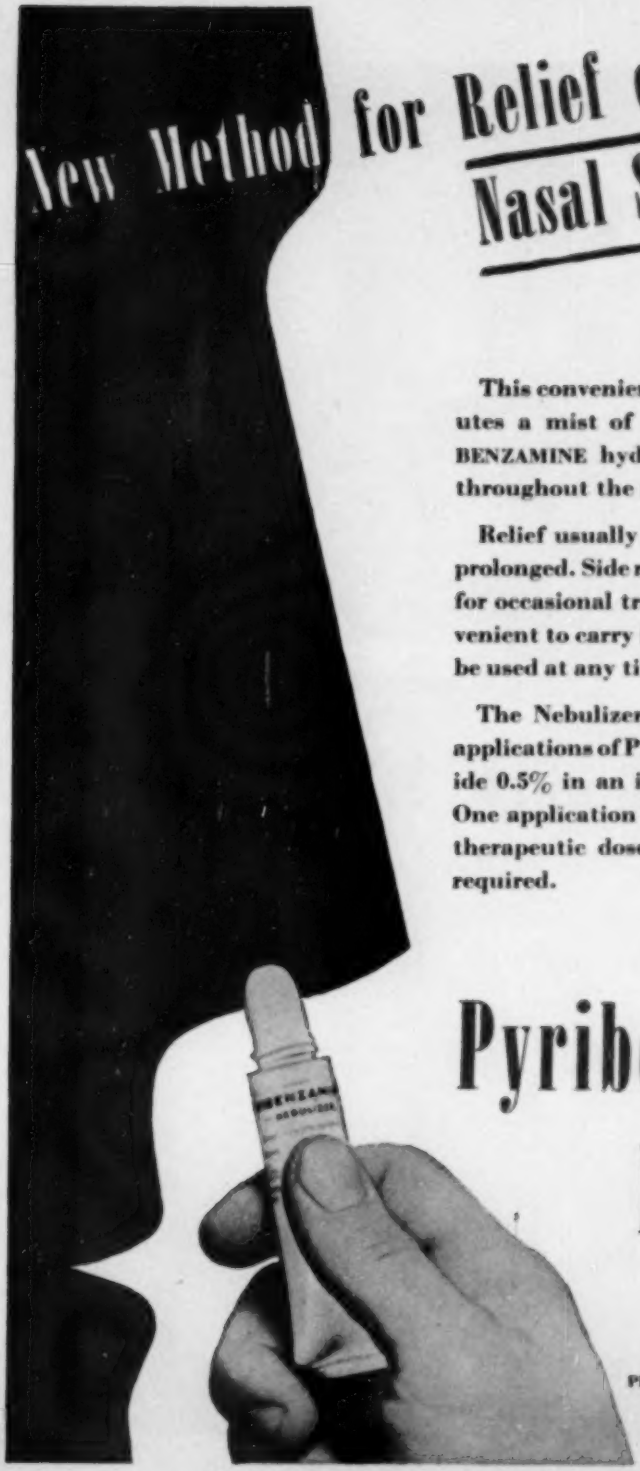
Packaged—in bottles of 100 capsules

Feosol Plus by no means replaces 'Feosol'—the standard therapy in simple iron-deficiency anemias.

'Feosol Plus' T.M. Reg. U.S. Pat. Off.

Smith, Kline & French Laboratories, Philadelphia

New Method for Relief of Allergic Nasal Symptoms



This convenient plastic Nebulizer distributes a mist of minute droplets of PYRIBENZAMINE hydrochloride Nasal Solution throughout the nasal passages.

Relief usually is immediate—complete—prolonged. Side reactions rarely occur except for occasional transient stinging. It is convenient to carry in purse or pocket and may be used at any time in any place.

The Nebulizer provides several hundred applications of PYRIBENZAMINE hydrochloride 0.5% in an isotonic, buffered solution. One application in each nostril usually is a therapeutic dose and may be repeated as required.

Pyribenzamine Nebulizer

Ciba
PHARMACEUTICAL PRODUCTS, INC.
SUMMIT, NEW JERSEY

PYRIBENZAMINE ®
(brand of tripelennamine) 2/1941

ORAL ANDROGEN THERAPY

. . . via Nature's Hypodermic

"Convenience at practically no sacrifice in effectiveness" sums up the many advantages of oral androgen therapy with "nature's hypodermic" . . . mucosal absorption. Mucosal administration of VANTOSTOL-M BUCCAL TABLETS (methyl testosterone) is highly acceptable to most patients because this form of therapy is easily administered, convenient—and eliminates the fear of injection—ideal for supplemental therapy too.

VANTOSTOL-M BUCCAL TABLETS have the same indications in both male and female as parenteral testosterone, and are especially useful when moderate dosage is adequate for control and maintenance.

VANPELT & BROWN, Inc., Richmond, Virginia

VANTOSTOL (testosterone) crystalline is also available in the following dosage forms in multiple dose vials.

10 cc.—in aqueous suspension, 10 mg. per cc.
10 cc.—in aqueous suspension, 25 mg. per cc.
10 cc.—in vegetable oil, 10 mg. per cc.
VANTOSTOL-P in vegetable oil—10 cc.
(25 mg. testosterone propionate per cc.)

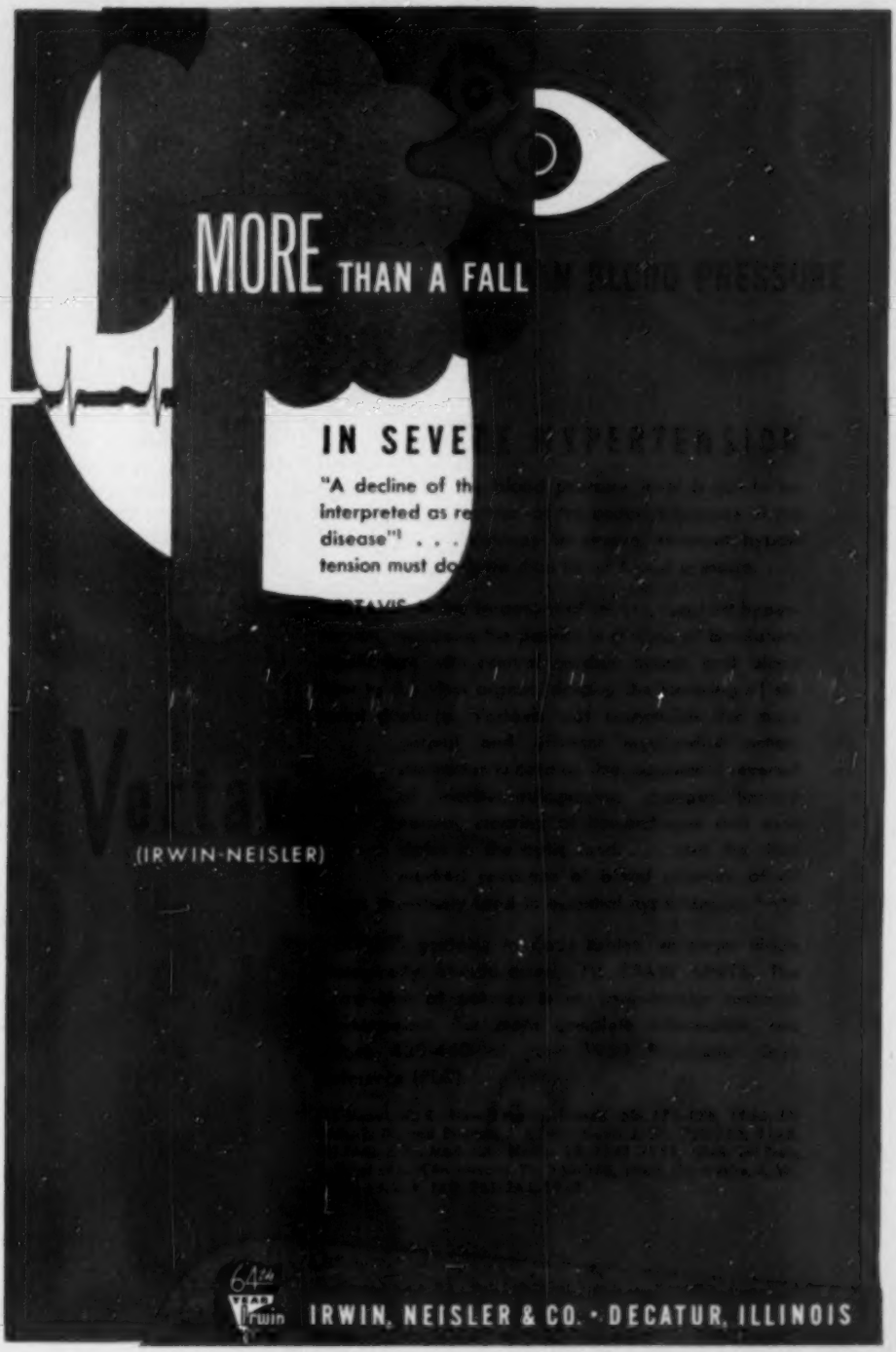
DOSAGE:

Five to 20 mg. in divided daily doses.

SUPPLIED:

Buccal Tablets (5 mg. methyl testosterone). Buccal Tablets (10 mg. methyl testosterone). Both supplied in bottles of 30 and 100.

VANTOSTOL-M
BUCCAL TABLETS


MORE THAN A FALL
IN SEVE
"A decline of th
interpreted as re
disease"! . . .
tension must do
(IRWIN-NEISLER)
IRWIN, NEISLER & CO. • DECATUR, ILLINOIS

LETTERS

continued

from page 26a

"If the patient who does not have a doctor requires operation or other therapy, to whom is the patient referred?

"In addition, the opening of the Vincent Astor Clinic, a profit-producing enterprise for the diagnosing and treating of private patients, is advertised in all New York papers in the form of news stories, editorials and pictures, in a manner wholly inconsistent with the principles of medical ethics and the by-laws of the County Medical Society. Any doctor or group of doctors using similar methods of advertising would be promptly chastised by the County Society.

"A grave injustice is being done to the thousands of physicians who work hard and faithfuly in their own offices and who give their services to the care of the indigent. These men must pay for the maintenance of these offices, must pay their nurses and must pay for their equipment. They do not have the advantage of being endowed and of using hospital nurses and hospital equipment. The bestowing of titles in no way bestows special skills or special diagnostic acumen. This clinic in no way makes available to the public any service or services not available in private physicians' offices.

"I am a firm believer in group practice, which was legalized in New York in 1947. But I am also a believer in the old and tried American principles of free enterprise and fair competition. Groups of physicians practicing together for the good of their patients should be encour-

—*Continued on page 48a*

combined anesthetic-lubricant action
facilitates cystoscopy, proctoscopy
and other endoscopic procedures

relieves anal and rectal pain
especially valuable postoperatively
Each package contains an anorectal applicator

protective anesthetic dressing for painful
first and second degree burns

How effective is ACNOMEL in ACNE?

New evidence from a comprehensive study*

100 patients with acne were treated with Acnomel—S.K.F.'s rapid-acting, lesion-masking acne preparation. Writing in *The Journal of the A.M.A.*, the author reports of Acnomel—

"Acne was either arrested or decidedly improved in all cases."

Flesh-tinted Acnomel "matched the average skin, enabled the patient to cover the lesions and thus prevented embarrassment" and psychological trauma.

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*Dexter, H.: Studies in Acne, J.A.M.A. 142:715 (March 11) 1950

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LETTERS

continued

from page 44a

aged and would constitute the salvation of American medicine. Endowed hospitals usurping the rights of the private physician and practicing medicine in competition with him is contrary to all the principles of the American Medical Association."

Lawrence Essenson, M.D.
New York, N.Y.

THE DOCTOR DISSECTS FACTS ABOUT BONDS

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C. Wadsworth Schwartz, M.D.
New York, N. Y.

EUTHANASIA

". . . I have studied medicine to cure my patients, not to kill them."

Louis Albert, M.D.
Van Buren, Me.

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1. Krasno, L. R., Grossman, M. I., and Ivy, A. C. (1949), The Inhalation of 1-(3',4'-Dihydroxyphenyl)-2-Isopropylaminoethanol (Norisodrine Sulfate Dust), J. Allergy, 20:111, March. 2. Krasno, L. R., Grossman, M., and Ivy, A. C. (1948), The Inhalation of Norisodrine Sulfate Dust, Science, 108:478, October 29.

Ruptured Ectopic Pregnancy Complicated by Intestinal Obstruction

Donald J. Manning, M.D., and George S. Zarou, M.D.

Brooklyn, N. Y.

F. H., a white woman, aged 31 years, nullipara, was admitted to the hospital July 27, 1949 complaining of severe generalized abdominal pain. Her past history was non-contributory except as to her June period, which began on time, but was altered in that she spotted scantily the first three days, following which she bled moderately for seven days. From July 7th to the day of admission, i.e., 20 days, there was no further bleeding. No symptoms of early pregnancy were elicited.

Present illness began with a sudden onset of weakness and profuse perspiration, followed by syncope, on her way home from work on the day prior to admission. About twenty minutes later, as this weakness subsided, she experienced violent, intermittent, cramp-like pains in the epigastrium. The attacks lasted about five minutes and recurred every half hour. An enema produced poor results, but was followed fifteen minutes later by a satisfactory bowel evacuation. She was examined at this time by her physician, who gave her morphine and atropine. The next morning her abdomen was distended and very painful on moving about in bed. She was admitted that day, July 27, 1949.

Admission physical examination revealed a pallid, poorly nourished, asthenic, 31-year-old white female complaining of severe abdominal pain. There was no evidence of shock, dyspnea or cyanosis. The abdomen was markedly distended and tympanitic. Involuntary rigidity was absent, but generalized rebound tenderness could be elicited. No masses or organ edges were felt. Liver dullness was normal. A fluid wave could not be made out. No sounds were heard over the abdomen. Pelvic examination revealed very little due to abdominal distention. There was no vaginal bleeding, but the cervix was moderately sensitive to motion. Neither the uterus, adnexa, nor any masses could be felt. Temperature was 100; pulse 80; respirations 21; blood pressure 120/70; RBC 3,200,000; WBC 11,600 with 82 per cent polys; Hgb 9.5 gms. ESR was 37 mm. Urinalysis was negative. Cervical and urethral smears were negative. Flat plate of the abdomen was reported as follows: "Tremendous dilatation of the ascending, transverse, and proximal descending colon, with abrupt cut-off at the junction of the proximal and middle thirds; minimal gaseous distention of distal small bowel. Opinion: Obstruction, descending colon." Surgical consultation: "Closed loop large bowel obstruction, etiology undetermined, further observation."

Course in the hospital:—Following the admission work-up, a Miller-Abbott tube was inserted and connected to Wangensteen drainage; intravenous glucose, 1000 cc. 5 per cent in saline, was administered; 500 cc. of whole blood was given; and 50,000 units of penicillin was ordered every three hours. On 7/28/'49, the next morning, TPR were the same, abdominal

From the Department of Obstetrics and Gynecology, the Norwegian Lutheran Deaconesses' Home and Hospital.

distention was still present, but the abdomen was less tender. A Harris drip was set up with no results. A Friedman test was ordered. On 7/29/'49, the patient felt much better, but remained distended. An enema gave no return. ESR was 53 mm.; RBC 3,500,000; WBC 10,000 with 78 polys; and Hgb 10 gms. On 7/30/'49, patient began to pass gas per rectum. She was given fluids by mouth and a light soft diet was ordered. The distention improved somewhat and on 8/2/'49 was practically gone. An enema gave good results at this time. Abdominal tendereness disappeared except in the lower left quadrant. Proctoscopy was normal, but slight vaginal bleeding was noted for the first time following this procedure. The Friedman test was reported positive. The vaginal examination was repeated: Slight vaginal bleeding; cervix was in the axis of the vagina, and sensitive to motion; the uterus was slightly enlarged and moderately soft; the right adnexa were negative to palpation; the left adnexa were tender and a small mass approximately 3x2 cms. was felt. Impression: Ruptured ectopic pregnancy.

At operation, a ruptured ectopic pregnancy was found about 1 cm. from the left cornu of the uterus. There was about 800 cc. of blood in the peritoneal cavity. A left salpingectomy was performed. Inspection and palpation of the large and small bowel revealed no abnormalities. 500 cc. of whole blood was given and the patient left the operating room in good condition. The postoperative course was uneventful and she was discharged on the ninth postoperative day.

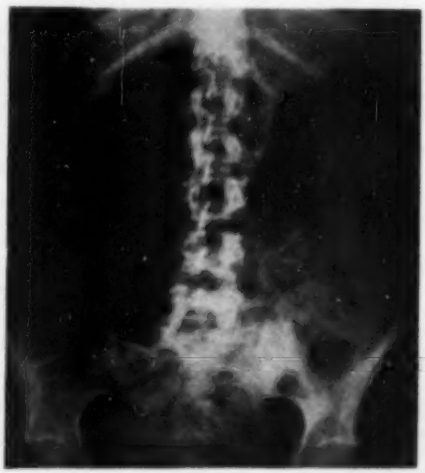
Discussion

The actual mechanism by which a spastic functional type of intestinal obstruction occurs is obscure, and the cause is poorly understood. It is well known, however, that this condition arises in infectious fevers, renal colic, and less frequently in gallbladder colic. Neurasthenia and hysteria have been reported as causative of spastic ileus of the large bowel.[1]

It would seem logical that intraperitoneal rupture of a tubal pregnancy, from the pathological aspect, with the extravasation of large amounts of blood, could set up a "chemical peritonitis" that in turn might initiate, quite reasonably, a spastic intestinal obstruction. However, this complication, after extensive review of the literature, proves to be a rare occurrence.

Schumann[2] in his monograph describes a type of reaction which closely resembles this case. He states "the frank rupture occurs with sudden violent pain in one or the other iliac fossa, sometimes accompanied by nausea, vomiting or syncope, from which the patient rallies in a short time, after which the pain becomes generalized. Examination reveals distention of the abdomen, moderate tympany and extreme generalized tenderness. The pulse and blood pressure are usually normal." He further emphasizes that this clinical picture is not found in descriptions of the subject, and is not discussed at any length in the literature.

A review of 101 deaths in 2204 ectopic pregnancies by Williams and Corbit[3] made no mention of preoperative intestinal obstruction.



Flat plate of abdomen taken on day of admission, illustrating intestinal obstruction at junction of middle and lower thirds of descending colon.

One case of pure mechanical obstruction was reported by Vincent.[4] At operation the sigmoid was completely occluded and adherent to the posterior wall of the uterus. When the adherent loop was freed a small perforation of the uterus was found, probably due to a curettage done three weeks previously.

Creyssel[5] reported a case of mechanical obstruction diagnosed at operation caused by adherence of small bowel to a large hematocele.

Lisa[6] found marked abdominal distention in 12 of 115 cases operated for tubal pregnancy, while Falk[7] says "abdominal distention is a frequent sign that is overlooked."

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Streptomycin Therapy in Pulmonary Tuberculosis

A series of 7 patients with posthemoptic spreading of progressive tuberculosis, each critically ill, were treated with 2, 1, or ½ Gm. of streptomycin a day, administered intramuscularly in 5 divided doses, 2 doses, or in a single dose. In this series 4 patients were dramatically improved, 1 moderately improved, and 2 were complete failures.

Based upon this series and observations from many other patients similarly treated, Furtos, writing in *U. S. Armed Forces Med. J.* [5:137 (Feb. 1950)], came to several conclusions. The frequency of administration of the daily doses had no effect upon the therapeutic effectiveness of treatment. The 2 Gm. dose proved to be too toxic and the 1 and ½ Gm. doses gave approximately the same therapeutic effect. When streptomycin was administered over a period of 120 days, as has been the usual treatment period, about 70 per cent of the patients developed resistant strains of bacteria. However, when the treatment period was 42 days there was very little evidence of the development of resistance and the therapeutic response was practically as good. Consequently, the author recommended a 42-day treatment schedule of 1 Gm. of streptomycin a day for those patients in whom bed rest and a 7 to 10 day regimen with penicillin have not brought about resolution of the posthemoptic spreads.

Therapeutic Use of Vitamin C in Virus Diseases

Doses of 1000 to 2000 mg. of vitamin C were given every 2 to 4 hours intravenously (children under 4 years received intramuscular injections) to 60 patients with poliomyelitis. The administration of the vitamin was reduced to 4 times a day after a consistent drop in temperature, which usually occurred within 24 hours. All of the patients were clinically well after 72 hours, according to Klenner, writing *in South. Med. & Surg.* [*111*:209(July 1949)], but since 3 relapsed when treatment was discontinued at the end of this time therapy was continued in the others 2 or 3 times a day for an additional 48 hours. The spinal fluid had reverted to normal after the second day of treatment. The patients who were treated at home received the same doses orally in fruit juice or with 20 mg. rutin in addition to 2000 mg. parenterally four times a day. Similar doses abolished the pain in 7 of 8 patients with herpes zoster within 2 hours. Measles, mumps and virus pneumonia responded with complete recovery within 1 to 3 days and chicken pox and virus encephalitis responded well to similar treatment. No toxic reactions were observed.

Daily Variations in Basal Metabolic Recordings Throughout the Entire Menstrual Cycle Determined at Home Under Ideal Circumstances

Robert S. Millen, M.D.
and Joseph Hindman, M.D.
Glen Cove, New York

The following charts of daily basal metabolic readings determined at home under ideal circumstances throughout an entire menstrual cycle are published because many people today are still prescribing thyroid medication, particularly for infertility patients, on a single B.M.R. reading. This study was originally undertaken for personal education and clinical importance to individual patients, but is published because the literature reveals no such daily observations in relation to changes in the entire menstrual cycle.

In 1928, Hitchcock and Wardwell (1), reported their observations on some twenty different subjects, whose B.M.R.'s were determined two or three times a week on a Roth-Benedict apparatus, after the technique of Roth. One subject was under almost continuous observation for a year, another for nine months, while the data on the remaining eighteen cover periods

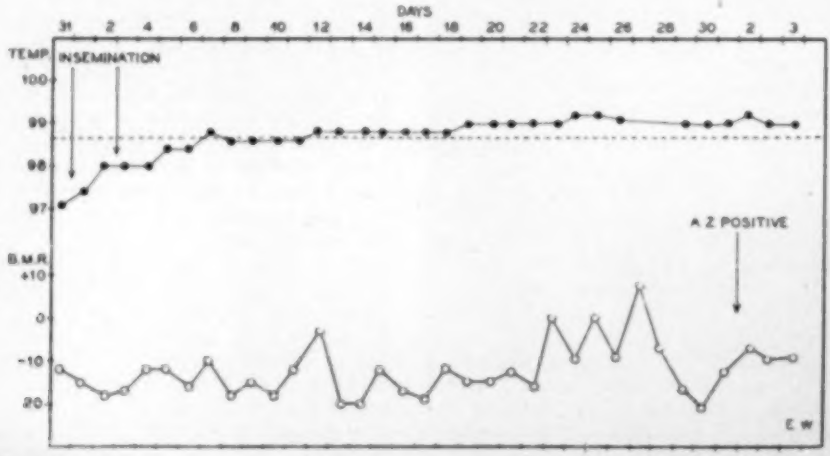

Chart 1

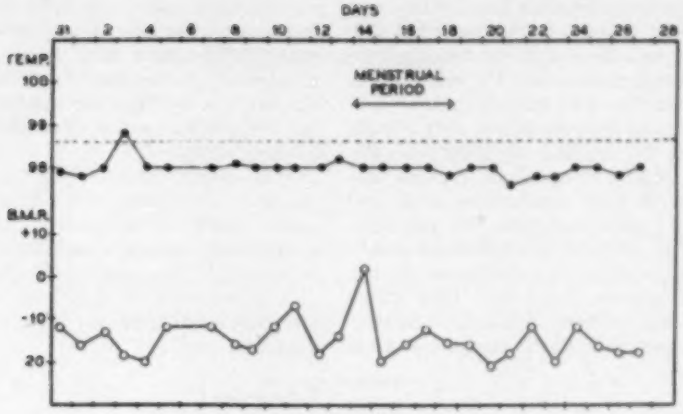

Chart 2

ranging from two to six months. Fifteen of the subjects showed a lowering of the B.M.R. during the menstrual period, while in the other five there was either a slight rise or no change at menstruation. Usually a rise in rate occurred during the week preceding the beginning of menstruation. In a number of cases a marked depression was observed about the 14th day after the beginning of menstruation. In some cases this depression was as great or greater than that which occurred during menstruation itself.

In 1933, Mühlbock (2), while quoting many authors and their differing opinions, suggested that the difficulty of the problem lies in defective methods and in the great individual range of fluctuations caused by manifold factors which in individual cases are hard to establish and can scarcely be excluded. He concluded that fluctuations in the basal metabolism take place during the menstrual cycle, but are so slight that in individual cases it is not possible to establish them with certainty since the individual range of fluctuations conditioned by numerous factors is so great, and that the cause of the cyclic fluctuations of the basal metabolism is still absolutely unexplained.

In 1934 Hans Guggisberg (3) reported a series of experiments:

Basal Metabolism and Cyclic Processes—He tested 16 rats daily to see whether there

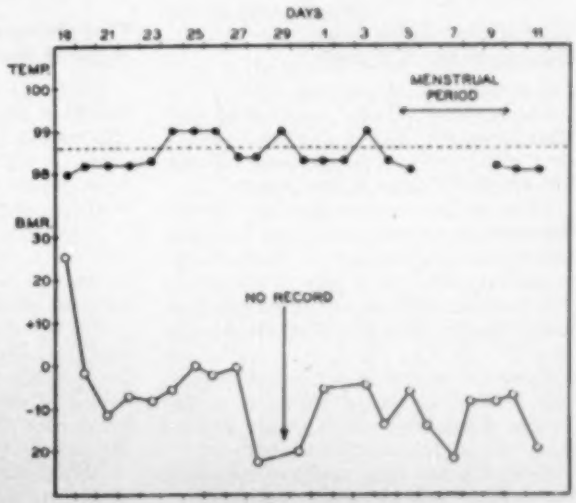

Chart 3

was any relation between basal metabolism and ovarian conditions. He concluded that there was no influence of the ovarian cycle on the basal metabolism. He also reports on five patients with various ovarian disturbances who were all treated with ovarian hormones. He reached no definite conclusions in regard to metabolic changes and regarded the basal metabolism of all five patients as normal despite the glandular dysfunction. He concludes that the countless experiments on the relation of the sex glands to general metabolism have failed to show any influence; the cyclic processes of the organism leave the basal metabolism unchanged.

Method

A trained technician was utilized to take daily studies after several days of preliminary preparations to get the patient used to the machine, etc. A careful technique was worked out for each individual case. For instance, in one case—Mrs. E. W. (Chart 1)—the nurse entered the house at 6 A.M., put on the husband's coffee, knocked on the bedroom door and as the husband was bathing, inserted the rectal thermometer, rolled the basal metabolism machine across the room, recorded the rectal temperature and then took the metabolism. In this manner the metabolism was taken at home at the same hour every day without any worry about the husband missing breakfast.

This patient became pregnant during this study. A second patient was examined under similar circumstances except that she did not become pregnant during the cycle. Chart three was made upon a sister of a technician in a maximum attempt to eliminate any extraneous influence on the metabolic rate.

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✚

Find Newer Sulfa Drug Desirable for Children

Successful use of gantrisin, a sulfa drug formerly called NU-445, in treating children is reported by Drs. John A. Bigler of the Children's Memorial Hospital, Chicago, and Orville Thomas of Shreveport, La.

Good results were obtained in 55 children with pneumonia, bronchitis, tonsillitis, urinary infection and ear inflammation, the doctors say in a recent issue of the *American Journal of Diseases of Children*, published by the American Medical Association.

Gantrisin is low in toxicity, they point out. It also has the advantage of a high degree of solubility which assures that the drug will not crystallize in the body.

Gantrisin has been used successfully to treat two patients with meningococcic meningitis, according to the doctors.

Find Chloromycetin Effective Against Tularemia

Successful treatment of six cases of tularemia, also known as rabbit fever, with chloromycetin, one of the newer antibiotic drugs, is reported by a group of doctors from the University of Maryland School of Medicine, Baltimore.

The disease is acquired from wild rabbits and other wild animals and insects. It occurs as a local skin lesion and as a generalized infection with fever.

The doctors—Robert T. Parker, Robert E. Bauer, Howard E. Hall and Theodore E. Woodward—and Leonard M. Lister, a medical student, describe their findings in a recent issue of the *Journal of the American Medical Association*.

Both streptomycin and aureomycin previously have been shown to be valuable in treating tularemia.

SPECIAL ARTICLE

Cardiac Arrhythmias

This summarization attempts to cover the essential therapeutic information on the subject and is designed as a time-saving refresher for the busy practitioner.

***Reprints available**

The term, arrhythmia, implies a departure from the normal or usual rhythm and in this instance refers specifically to the abnormalities of rhythm associated with heart beat. While there are numerous irregularities in beat which occur in a heart, there are only a few of sufficient clinical importance to warrant a thorough discussion in a review such as this. Arrhythmias are among the most common problems in clinical cardiology; they may occur at a regular rate or an irregular rate. They may be entirely secondary to an underlying pathological condition, important in themselves or of little therapeutic interest because no structural cardiac abnormality can be detected.

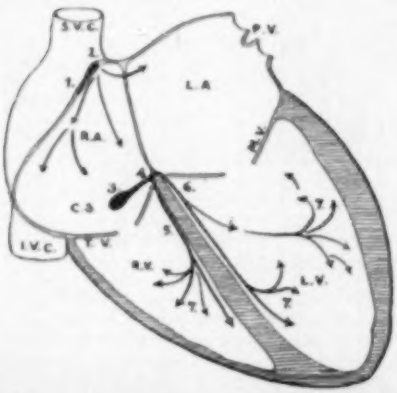

Fig. 1. Exitatory and conductive system of the heart. (after Graybiel and White) 1. Sino-auricular node. 2. Usual site of pacemaker. 3. Auriculo-ventricular node. 4. Bundle of His. 5. Right bundle-branch. 6. Left bundle-branch. 7. Purkinje network radiating out from papillary muscles.

Normal Heart Rhythm

In the normal heart the beat stimulus arises in the sino-auricular node located in the right auricle near the opening of the superior vena cava. The wave of excitation spreads radially over the auricles and arrives at the auriculo-ventricular node (located at the lower portion of the inter-auricular septum). From here it is conducted to the ventricles by means of the auriculoventricular bundle, through its branches and the Purkinje fibers which terminate in the musculature of the right and left ventricles. This excitation wave which occurs at a rate of about 72 per minute requires approximately 0.2 seconds to pass to the ventricles and is closely followed by muscular contraction (1, 2).

Fibers of the vagus nerve supply parasympathetic innervation which inhibits conductivity, contractility, excitability, and

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* From the Editorial Research Department of the MEDICAL TIMES, 67 Wall Street, New York 5, N. Y.

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tonicity of heart muscle. Right vagus fibers principally terminate in the sinus node, while those of the left vagus are distributed to the auriculoventricular node and to the bundle. Sympathetic response stimulates conductivity and contractility, and the accelerator nerve supplies these fibers.

Cardiac muscle is unique among body muscles in that it exhibits a refractory period after contraction and possesses the properties of excitability, rhythmicity and conductivity. Usually it follows the "all or none law"; thus a stimulus great enough to produce any contraction will induce full power contraction of the muscle. The period of diastole in the heart beat extends for about 0.4 second and the period of systole for about the same time, 0.1 second for auricular systole and 0.3 second for ventricular (1, 2, 3).

Diagnosis of Arrhythmias

Diagnosis of cardiac rhythm irregularities is considered in more detail under the particular arrhythmia involved; however, certain general procedures can be presented summarily. A systematized series of procedures in physical examination may do much to detect and properly classify a rhythmic irregularity. The pulse at the wrist may be used to analyze heart beat sequence, and pulse deficit can be estimated by one minute simultaneous counts of the apex and radial pulses. Comparison of rhythm on auscultation with radial or carotid pulses can be used to detect auricular contractions in complete heart block or other arrhythmias. With the patient in a supine position pulsation may be observed in the distended external jugular veins and jugular bulbs. These pulsations are more easily seen if a strip of paper bent near the end is applied to the moistened skin over the vessel. This method detects auricular contraction, ventricular filling and ventricular contraction as discrete waves (2). Blood pressure findings are often helpful in diagnosis of irregularity such as auricular fibrillation (4).

Results of clinical examination should be correlated with electrocardiograms where possible to insure accuracy. The characteristic tracing of a normal heart beat results from the electrical activity which accompanies contraction of cardiac muscle. Summarily, the typical picture includes a P wave corresponding to auricular activity, a marked rapid up and down movement of the writing lever or the

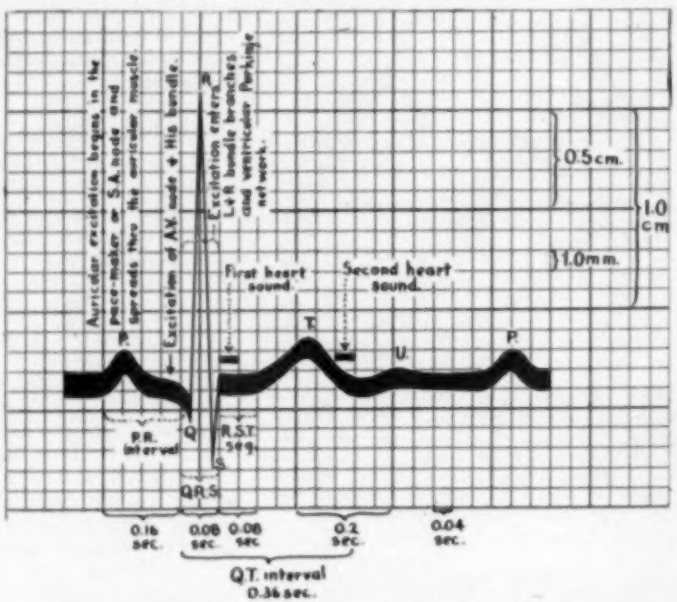
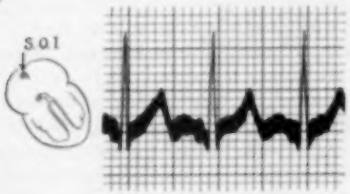


Fig. 2. Normal electrocardiogram with explanation of waves.

Q R S complex which corresponds to the spread of the electrical excitation wave over the ventricles, and finally a wave designated as the T wave which indicates the recession of the electrical impulse. A period of no activity ensues before the beginning of another series with the recurrence of a P wave. Variations from the normal picture may give pertinent information regarding the presence and type of an irregular rhythm (2).

While accurate diagnosis of an arrhythmia is important so that proper therapeutic measures may be instituted, the detection of an irregularity is not highly significant in itself but is merely an indication of cardiac malfunction. All possible effort should be made to discover what is responsible (1). Strictly it is no more sufficient to say that a patient has a slight cardiac irregularity without attempting to locate the cause than it is to say a patient has a fever without trying to determine if the fever is due to scarlet fever or some other disease (5, 6).

Sinus Tachycardia

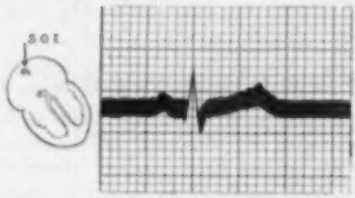


S.O.I.=Site of impulse

This condition is characterized by a rate in excess of 100 beats per minute and is usually the result of some underlying condition. It may be caused by exercise, emotion, sympathicotonia, fever, shock, hyperthyroidism, coronary occlusion, congestive heart failure, etc. (7). It may result as a physiological response to exercise where an increased cardiac output is necessary. The rate usually increases and decreases in a gradual fashion (is not paroxysmal), and a normal sequence of waves is seen electrocardiographically, although the number of P-Q R S-T waves per minute exceeds the normal (2).

Therapy is directed toward the etiological factor involved such as rest when caused by exercise, sedatives when caused by emotional disturbance, etc. Quinidine has been reported as ineffectual (8), but in a series with no apparent etiology, neostigmine methylsulfate (9) aborted tachycardia when 1 mg. was injected intramuscularly. Recurrence was prevented by 15 mg. orally of neostigmine bromide (10) 4 times daily (11).

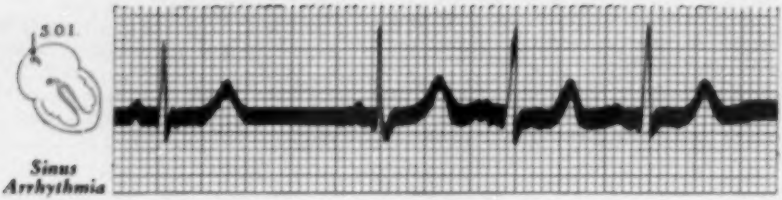
Sinus Bradycardia



When the heart rate falls to 50 per minute or less, the condition known as normal or sinus bradycardia may be present. It is common in athletes and young adults especially during sleep, or it may be caused by intracranial hemorrhage, intracranial pressure due to brain tumor, hypothyroidism, malnutrition, digitalis therapy or vagal activity. The electrocardiographic picture is normal except for an extended P-P interval. Because this normal bradycardia is terminated by exercise, it is easily differentiated from heart block. Treatment consists of therapeutic elimination of the underlying condition (1, 2).

Sinus Arrhythmia

This physiologic phenomenon which accompanies respiration is characterized by a heart rate which gradually accelerates on inspiration and retards on expiration, a condition just opposite from normal. It is found normally in all infants, many children and some adults; occasionaaly this irregularity is seen when recovery from sinus tachycardia takes place (7, 12). Electrocardiograms show only a varied P-P interval while the P-Q R S-T complex occurs in normal sequence. When auricular fibrillation is accompanied by a retarded ventricular rate, the condition re-



Sinus Arrhythmia

sembles sinus arrhythmia but differentiation can be made because sinus arrhythmia shows no pulse deficit and usually disappears during or after exercise (2).

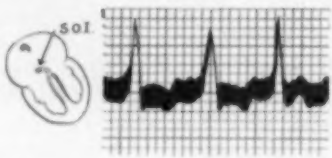
Sinus Pause or Sino-auricular Block

Also known as sinus standstill this is accompanied by dizziness and sometimes syncope. Carotid sinus hypersensitivity may result in an attack when the head is quickly turned, by a tight collar or other factor which results in vagal stimulation. Other causes such as the sight of blood or an excessively hot room may also precipitate an attack. The interval between beats is twice as long when the arrest occurs occasionally; if the pause is prolonged, the ventricles may escape. Thus the condition must be differentiated from heart block and premature beats. Heart block is not abolished by atropine, and premature beats can be detected in the electrocardiogram since the beat occurs earlier than expected (2,7). Sino-auricular block requires therapy only when it occurs quite frequently. Atropine, belladonna or sedatives may be given as treatment. Atropine sulfate can be prescribed in 0.6 mg. tablets 3 times daily and phenobarbital may be given as 15 mg. tablets 3 times daily (7) with or without ephedrine. A typical prescription which may prove useful is:

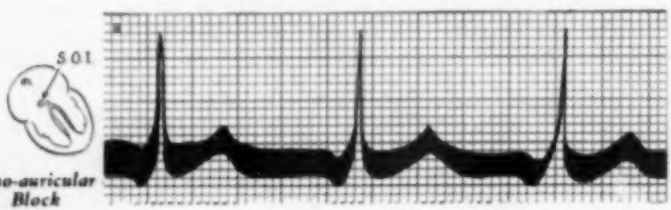
Belladonna Tincture	16.0
Sodium Bromide	16.0
Raspberry Syrup to make	90.0

A teaspoonful of the mixture is given 3 times a day (7).

Paroxysmal Auricular Tachycardia



As indicated by the name this arrhythmia is initiated and ceases suddenly. The heart rate is regular and may vary from somewhere below 160 per minute to over 200; one case has been reported with a ventricular rate of 365 per minute (14). The condition is found often in apparently normal hearts as well as in those which are diseased and may be associated with rheumatic fever, mitral stenosis, thyrotoxicosis, acute coronary occlusion, and many acute infections. Patients are usually aware of palpitation, fluttering or other cardiac disturbance. Attacks may be very short or in some instances may be prolonged for weeks or months (1, 12); they are more common in younger individuals than adults and are frequently reported in infants (15-17).



Sino-auricular Block

Paroxysms are brought on in susceptible individuals by tea, coffee, tobacco, drug or gastro-intestinal intoxication or may occur with any of the above mentioned conditions. Generally the opinion is held that heart failure results only in previously diseased hearts (18). At least one cardiologist believes that causes other than simple tachycardia are to be suspected when collapse is associated with rates under 200 or when arrhythmia termination or rate reduction is not accompanied by prompt reestablishment of normal circulation (19).

Probably the most useful diagnostic features are a history of sudden onset and offset, a regular rate during paroxysms and apparent independence from rest or exercise. Carotid sinus pressure commonly used in treatment can be employed in differentiation from numerous similar irregularities. Electrcardiograms show a rapid, regular succession of Q R S complexes of normal contour; the ventricular rate seldom varies more than 2 or 3 beats per minute; P waves may be inverted and the P-R interval prolonged. If the P waves are not discernible, paroxysmal auricular tachycardia cannot be distinguished from nodal paroxysmal tachycardia; however, the treatment for both conditions is the same (20).

There are 2 phases of treatment for this arrhythmia, the arrest of the paroxysm and the prevention of subsequent attacks. Mechanical measures to cause vagal stimulation are always tried initially. If these fail, it may be necessary to use drugs or a combination of mechanical measures and drugs. Vagal stimulation which is initiated by carotid sinus pressure is one of the most popular methods of treatment. It has many advocates who recommend it above all other measures, but some controversy exists as to its effectiveness (2, 12, 20, 22). Nevertheless, it remains one of the most commonly used therapeutic procedures. It is recommended over ocular pressure which is quite painful to the patient and over parasympathomimetic drugs which stimulate all cholinergic nerve endings rather than just those in the heart and peripheral vessels. Usually the patient is reclining, and the neck is extended by means of a pillow under the shoulders. The head is turned slightly away from the side of the carotid sinus to be stimulated, and the carotid sinus is located. Often it is felt as a bulbous enlargement at the angle of the jaw; however, if it is not easily found, the point of maximal carotid pulsation may be used as a guide. Digital pressure is applied toward the vertebral column by vigorous rubbing several centimeters above and below, as well as directly over, the carotid sinus. At the first sign of change in heart rate, the pressure is stopped, but in case the rate is not affected pressure is continued for about 10 seconds (23). When the above procedure is not effective various other measures should be employed before it is abandoned. Some of these are pressure with the patient in a sitting position; repeated attempts at vagal stimulation either on the same or the other carotid sinus (24, 25); pressure after the administration of lanatoside C, methacholine chloride U.S.P. (26) or neostigmine (27, 28, 29). Not all of the effects of carotid sinus stimulation are desirable. Syncope and convulsions are reported (30) and at least one case of ventricular fibrillation is described (31), for the procedure is of little value in arrhythmias other than supraventricular (23). Ocular pressure, deep breathing, vomiting, assumption of various body positions, expiring or inspiring against a closed glottis all have been recommended to produce reflex vagal stimulation (2, 7, 12, 22).

Methacholine chloride U.S.P. (26) may be given for its cholinergic effect subcutaneously in 10-60 mg. doses depending on the age and size of the patient. However, it is not without disadvantage, and a syringe containing atropine should be readily available in case of emergency (29, 32). Acetylcholine bromide intravenously in an initial dose of 20 mg. followed by successively increasing doses up to 100 mg. also is used (33, 34). Another parasympathomimetic agent, neostigmine methylsulfate (0.5 to 1 mg. intravenously, intramuscularly, or subcutaneously), receives favorable mention (35).

Other measures which have been used

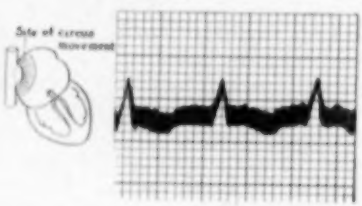
to abort attacks include intravenous cardiac glycosides or digitalization by other means (16, 22, 27, 36-35); quinidine sulfate (2, 22) orally; emetics such as apormorphine hydrochloride or ipecac syrup (39, 40); phenylephrine hydrochloride (41) for reflex activity following blood pressure elevation (42, 43); intravenous magnesium sulfate (44); calcium gluconate (7); and pentamethylenetetrazol (45, 46).

Recurrent attacks may be prevented by full digitalization with digitoxin maintained with a dose of 0.1-0.2 mg. daily or quinidine sulfate (0.3 Gm. given 3 times daily or higher doses if necessary) (22). When the cause of the paroxysms can be ascertained, of course, treatment should be directed toward this factor.

Nodal Tachycardia

This rapid succession of beats has essentially the same symptomatology and treatment as paroxysmal auricular tachycardia. It often occurs with such cardiac conditions as coronary occlusion and rheumatic fever (2, 7).

Auricular Fibrillation



A continuous fibrillatory twitching of the auricular muscle resulting from a neuromuscular disturbance replaces the normal auricular rhythm in this condition. The auricles are unable to empty efficiently, and blood flows continuously into the auricles and, except during systole, into the ventricles. Ventricular contraction occurs normally but the rhythm is disrupted (4). Auricular fibrillation may or may not accompany heart disease; when it does, it occurs in conditions such as mitral stenosis, thyrotoxicosis, rheumatic heart disease, arteriosclerosis and hypertensive states. It may be found in young individuals, usually associated with rheumatic fever, but it is more common in later years (2, 4, 7).

A fibrillating heart can be detected readily on auscultation because of the extreme rhythmic irregularity. Blood pressure findings are distinctive and may show a range of systolic and diastolic pressures rather than well defined limits. There is a pulse deficit usually greater than 10 (2, 7). Differential diagnosis is materially facilitated electrocardiographically; however, irregularities may be so slight that the intervals between ventricular beats must be measured with calipers. Q R S complexes are irregular in sequence, and P waves are absent (2, 4).

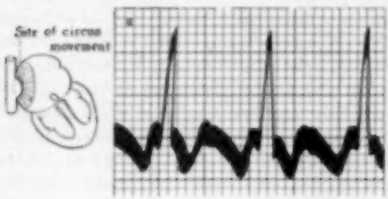
Embolism is frequently encountered in lung, brain, abdominal organs and peripheral arteries (4). Rapid fibrillation may result in heart failure even though the heart is normal, but generally the prognosis for life and maintenance of cardiac function is excellent unless associated with heart disease, when the condition appears rather late (12, 47, 48).

When the rate is rapid, chronic auricular fibrillation is always an indication for digitalis administration (49). Powdered digitalis, cardiac glycosides or purified glycosidal mixtures (50) may be employed. Digitalization should be rapid, but if the intravenous route is selected, the patient should not have had digitalis therapy within the past 3 weeks. Doses given are sufficient to reduce the heart rate at rest to about 70 per minute, except in the presence of hyperthyroidism where 90-100 beats per minute may be the lowest rate possible before toxic manifestations of the drug appear. Even when the ventricular beat is slow, the use of digitalis may be beneficial to prevent a marked rise in rate after exercise (49).

Quinidine has the power to establish normal rhythm in many fibrillating hearts; however, it has a number of contraindications, and there is not complete agreement among cardiologists as to its value (51-55). By majority opinion quinidine is not

recommended in chronic auricular fibrillation or where a history of earlier embolic accidents exists. To abort paroxysmal attacks a dose of 0.3 to 0.6 Gm. every two hours is recommended until fibrillation stops or toxic effects appear; the dose may be increased the following day if the first dosage schedule is insufficient (22, 51). Some clinicians believe that a test dose should be given initially to determine hypersensitivity of the patient (52). Quinidine is also recommended by some to prevent recurrence of paroxysmal attacks. Other drugs which have been used to abolish fibrillation are potassium acetate (56) and intramuscular quinacrine (57, 58).

Auricular Flutter



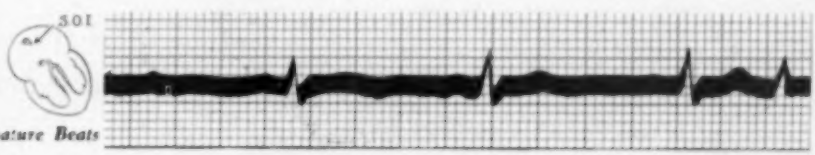
Auricular flutter has been ascribed to a circus movement of the auricles, but recent experimental work with animals seems to indicate an error in this concept (59). However, ventricles respond to auricular stimuli at a fairly regular rate, usually in a small number ratio. The auricular rate commonly is some multiple of 75 such as 150,225,300 or more, and a certain degree of auriculoventricular block is always present (5). The condition is more often associated with heart disease than not, and is less common than auricular fibrillation.

Diagnosis is difficult without an electrocardiograph, but careful inspection of the jugular pulsations will often reveal the rapid auricular rate. Electrocardiograms readily show the regular ratio of P waves to Q R S complexes. Carotid sinus pressure may cause a transient drop in heart rate both in auricular tachycardia and flutter, but only in flutter may an abrupt standstill result from this procedure, and in auricular tachycardia there is either a reversion to normal rhythm or no effect (49). There is a general belief that auricular flutter is of short duration extending over only a short period, but several cases which could be classed as chronic auricular flutter have been reported (60-63).

Since this condition usually accompanies some more serious heart ailment (60), therapy is directed toward the cause. Thus, bed rest and digitalization are treatments of choice, the latter being accomplished rapidly (within 24 hours). Doses slightly in excess of the amount required for digitalization may convert the flutter to fibrillation which will often disappear when the drug is stopped (12, 52). If the flutter persists digitalis should be continued in an amount large enough to maintain ventricle contractions below 100 per minute (49).

Premature Beats

Premature contractions may originate in the auricles, ventricles or sino-auricular node. They are not often of great clinical significance, but they cause uncomfortable symptoms due to the prolonged pause after the premature beat or from the forceful contraction following such a pause. To the patient his heart seems to thump or turn over. These beats are important when they indicate early manifestations of digitalis intoxication, myocardial insufficiency or acute myocardial infarction; therefore they should indicate the necessity for careful examination to detect the presence of cardiac pathology (2, 12). They are quite easily recognized on auscultation, but differentiation as to origin can be accom-



Premature Beats

plished positively only by means of electrocardiographic study (49). However, the treatment of each type is essentially the same (22).

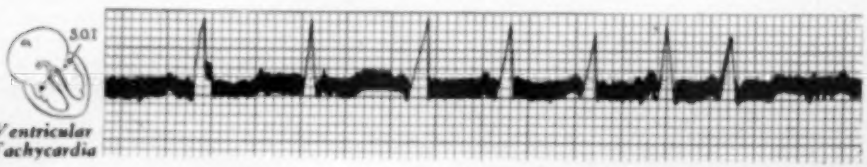
The cause largely determines the therapeutic measure to be instituted. The patient may be directed to abstain from coffee, tea and smoking. Often the mental strain can be combatted by the use of phenobarbital (30 mg. every 6 hours), but reassurance as to the harmlessness of the arrhythmia is essential to relieve anxiety (52). Quinidine is regarded as the treatment of choice by some when the cause cannot be controlled. It may be prescribed in a gradually increasing dose from 0.3 Gm. 3 times a day until the proper dosage schedule has been ascertained. Aminophylline (12) and papaverine (64) are other drugs which have been used.

Ventricular Tachycardia

Commonly this irregularity is paroxysmal in nature and ventricular contractions occur at a rate of 160 to 200 per minute. In relatively few instances it is found in hearts exhibiting no other detectable abnormality, but usually it is a symptomatic manifestation of some organic heart disease such as coronary occlusion, rheumatic fever, or as a result of hypertension, arteriosclerosis or digitalis intoxication (2). It also has been reported to occur with Wolf - Parkinson - White syndrome (65, 66). Auscultation, palpation of the pulse and knowledge of the basic status of the patient's heart may help to detect the condition, but for certain identification electrocardiograms are recommended. In the latter P waves occur at the normal rate but are often obscured by the Q R S complexes which are wide and slurred. Carotid sinus pressure has no discernible effect, and auscultation may reveal an occasional accentuation of the first sound for a single beat due to simultaneous auricular and ventricular systole. This is a chance phenomenon due to the practically independent beat of the auricles and ventricles (49). If attacks are prolonged, heart failure is imminent (7), and the condition is extremely hazardous if it occurs in myocardial insufficiency (2).

When specific treatment of this arrhythmia is indicated, quinidine is the drug of first choice (23). Quinidine is the optical antipode of quinine; it is dextrorotatory while quinine is levorotatory. It lowers the contractility, prolongs the refractory period and causes a decrease in conductivity of cardiac muscle. In toxic doses it may induce sino-auricular block and ventricular fibrillation, although it is less toxic than once supposed. Since it is rapidly excreted, cumulative action of successive doses is not a hazard (67). The recommendation of the National Research Council for its use in this condition is given, provided diagnosis has been made by electrocardiogram (68). The oral route of administration of quinidine sulfate as tablets or capsules is usually preferable to the parenteral since the drug is rapidly absorbed and stable in gastro-intestinal secretions. It may be given intramuscularly if more rapid action is desired, but intravenous quinidine is dangerous because it can cause cardiac arrest.

Usually a trial dose of 0.2 Gm. is recommended, and if well tolerated, 0.4-0.6 Gm. is given every 2 hours until that rate is reduced to 120 per minute. An electrocardiogram is taken at this point to detect any auricular activity, and the drug is continued until normal rhythm is restored, if such activity is present. If absent, the dose is reduced or the interval between doses is lengthened to maintain the 120 beat per minute rate. Electrocardiograms are made at 2 to 4 hour intervals, and the normal dosage schedule re-



Ventricular Tachycardia

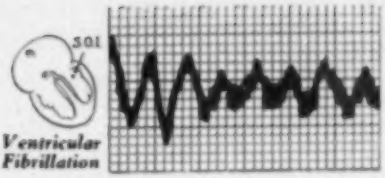
sumed only when P waves reappear. Thus a period of complete asystole is avoided when the arrhythmia ceases (71). Dihydroquinidine, a derivative which has received favorable reports in animal and human auricular fibrillation, may prove useful in other areas of quinidine therapy, but this agent is not available from commercial sources at present (72, 73).

Procaine hydrochloride (5-10 cc. of 1% solution) has been used intravenously to terminate attacks as well as by anesthetists during surgical operations to restore or maintain normal rhythm (74). Cases which are refractory to other agents sometimes respond to 10 cc. of 20% magnesium sulfate or to morphine (23).

Procaine is rapidly inactivated by plasma esterase and is destroyed in the gastrointestinal tract, therefore it must be given repeatedly in small doses by vein; its central nervous stimulant activity is also undesirable. Recent reports of a new agent, procaine amide hydrochloride (74a), claim to have eliminated many disadvantages of procaine administration. This drug is useful in cases refractory to quinidine and is reported effective when used orally in doses of 250 to 500 mg. every 4 to 6 hours or intravenously in doses of 2 to 10 cc. of a solution containing 100 mg. per cc. (74b). It may also be used to abolish ventricular arrhythmias during anesthesia and may be helpful in treatment or prophylaxis of ventricular extrasystoles in conscious patients.

Ventricular Fibrillation

Only very brief episodes of this arrhythmia are compatible with life, therefore, it is nearly always a terminal condition. The ventricles no longer empty and cardiac stagnation results. There is no effective treatment, but massive doses of quinidine (2), 2 cc. of 1% procaine hydrochloride administered directly into the ventricle (75), or massage of the heart manually (7) may be tried.



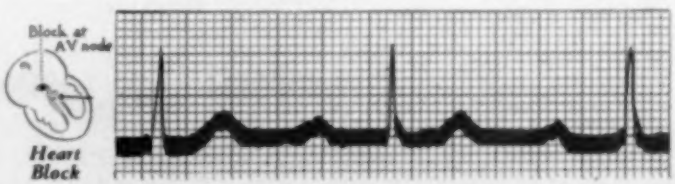
Ventricular Fibrillation

Heart Block

This derangement of normal impulse conduction may vary in degree from a prolonged P-R interval (first degree heart block) to a condition in which, through more serious conduction defects, there is an occasional dropped beat (second degree heart block); to complete dissociation of the auricles and ventricles (complete heart block). The main portion of the auriculoventricular bundle may be involved, or there may be blockage of the bundle branches (2, 7, 49).

Symptoms are absent in first degree block, and it can be most easily detected by an electrocardiogram in which the P-R interval is greater than 0.2 seconds. It may be associated with cardiac glycoside intoxication, arteriosclerotic heart disease or rheumatic fever but requires no treatment in itself unless due to drug intoxication.

In second degree block the arrhythmia can be found on auscultation, but differentiation from premature beats may be necessary. This is not difficult, for only in premature contraction is the pause preceded by an early beat. The auricle to ventricle beat ratio varies within a small integral ratio such as 2:1 or 3:1 or rarely 4:1 (75). Rheumatic heart disease commonly gives rise to this degree of block as do the factors involved in first degree block. Therapy is directed toward the etio-



Heart Block

logic factor. Atropine may prove helpful in a dose of 0.6 mg. to inhibit vagal effects (2, 49).

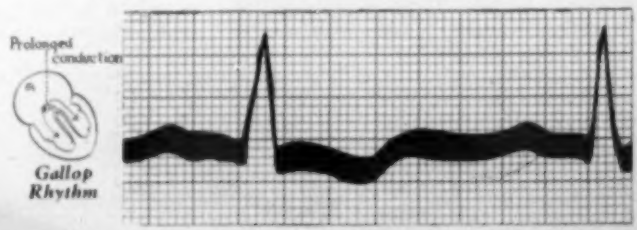
Complete heart block is a definite symptomatic entity, and in the transition from partial to complete block, ventricular standstill may occur until a new pacemaker in the ventricles begins to function. The auricular rate is established by the sinus node while the ventricular rate is usually slowed. Complete block should be suspected in infancy when a rate of 70-90 beats per minute is apparent and in adults when the rate is 30-40 per minute (75), and syncopal attacks are common. The condition may be differentiated from sinus bradycardia in that the latter only responds to exercise, and carotid sinus pressure does not affect the pulse in complete heart block. As in the lesser degree heart blocks, the etiology of auriculoventricular complete block is concerned with rheumatic fever, syphilis, arteriosclerosis, digitalis intoxication, following diphtheria, tuberculosis and other disorders which may cause lesions of the conduction tract (2, 12, 49).

A complication of higher degrees of heart block may be the Adams-Stokes syndrome which is characterized by faintness, dizziness, syncope or convulsions depending on the degree of cerebral anoxia (49). The attacks are caused by ventricular standstill, tachycardia, or fibrillation or a combination of these factors (75). Some report Adams-Stokes syndrome associated with esophageal diverticulum in which the diverticulum acts as a trigger mechanism to produce reflex atrio-ventricular dissociation, probably secondary to cardiospasm. The reflex is apparently mediated through the vagus in both its afferent and efferent paths (76). Adams-Stokes seizures are rare but recurrence is fairly common, thus the patient exists in constant anticipation of another attack.

Therapeutic measures are designed to increase irritability of the ventricles, decrease vagal tone to facilitate auriculoventricular conduction and to improve the blood supply to the conduction apparatus. Epinephrine hydrochloride solution 1:1000 may be given parenterally in doses of 0.5 cc. to 1 cc. (2) or a 1:100 solution may be sprayed or nebulized and inhaled orally every 1 to 4 hours for Stokes-Adams attacks (7). For prolonged attacks epinephrine injection (0.25-0.5 cc. or 1:1000 solution) may be given in the fourth left interspace adjacent to the sternum directly into the muscle or ventricular cavity by means of a 21 gauge needle 2½ inches long (75). Ephedrine sulfate orally 3 to 4 times daily in a dose of 25 mg. is sometimes helpful (12); parahydroxymethylphenethylamine hydrobromide (77) orally every 2 hours is another agent which has also been used (78). Decrease of vagal tone may be obtained through the use of atropine sulfate, 0.8 mg. 3-4 times daily (75). Coronary blood supply may be increased by intravenous administration of 300 mg. of aminophylline (75) or by oral administration of 25 mg. in enteric coated tablets 4 times daily (79). Some effectiveness is reported for papaverine hydrochloride, 60 mg. intramuscularly or 100 mg. orally divided into 4 daily doses. Other drugs which have been used but which may or may not be of value are pentamethylenetetrazol (45,80), barium chloride, thyroid (7), and nitrites (12).

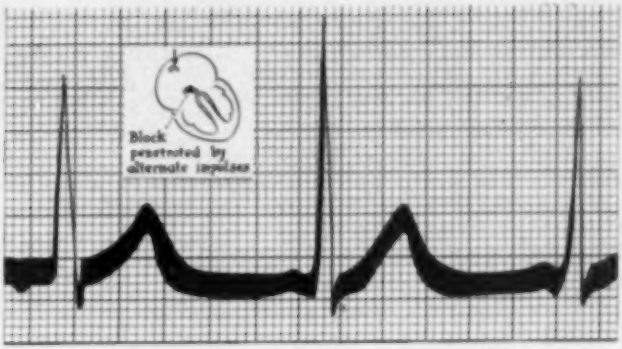
Gallop Rhythm

Among the unclassified arrhythmias is this condition which is characterized by heart sounds the register of which suggests the gallop of a horse. It is encountered in myocardial weakness with dilatation and is of grave prognosis when other heart disease is present (1).



Gallop Rhythm

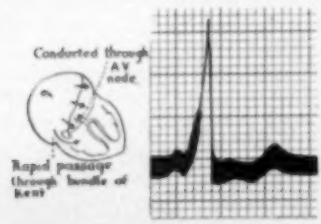
Pulsus Alternans



Pulsus Alternans

This is a disturbance of ventricular systole in which the radial pulse volume alternates between large and small. It may occur without causing too great alarm in very rapid heart rates such as with paroxysmal auricular tachycardia or auricular flutter, but it carries serious implications when the heart rate is normal. Severe infection, uremia, digitalis intoxication, hypertension and arteriosclerosis are some conditions with which it may occur. Treatment is that of the underlying condition (2).

Wolf-Parkinson-White Syndrome (81)



As an arrhythmia to be treated this syndrome has very little importance. It may occur as a congenital defect in healthy young individuals and is usually accidentally discovered. Electrocardiogram shows a wide Q R S complex preceded by a short P-R interval, usually less than 0.1 second. The condition may indicate a tendency toward paroxysmal rhythm, but otherwise it is not a serious irregularity and requires no treatment (1, 2).

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Polymyxin in Gram Negative Urinary Tract Infections

Intramuscular injections of 2 to 5.6 mg. polymyxin B or E per Kg. of body weight with 1 per cent procaine were given daily to 20 patients ranging in age from 5 months to 77 years to an average total dose of 10 mg. per Kg. Each of the patients had severe urinary tract infections, the organisms of which were found to be insensitive *in vitro* to streptomycin, penicillin, and sulfadiazine. *Pseudomonas aeruginosa* and coli-aerogenes organisms were successfully eliminated but *Proteus vulgaris* was not affected.

Epinephrine, intravenous calcium or antihistamines did not relieve the paresthesias, hypesthesias, mild dizziness and weakness which were experienced by almost all of the patients. However, within 24 hours after the discontinuation of therapy these side reactions had disappeared. Some cortical damage was observed by Pulaski and Rosenberg, according to a report in *J. Urol.* [62:564(1949)], with doses of more than 3 mg. per Kg., but these symptoms disappeared within a week after the end of therapy.

IN MEMORIAM

William Freeman Snow, M. D.

The late William Freeman Snow, M.D., stands as the figure who, more than any other person in the United States, brought together those medical, educational and moral forces which today form the framework of the national social hygiene movement. His work over the past half-century has contributed notably to the changing public attitude in the United States and other countries toward sex in its relation to health and disease, and to individual and social well-being.

This was the task set before the American Social Hygiene Association upon its formation in Buffalo in 1914. The need for it had been previously well established by Dr. Prince A. Morrow, President Charles W. Eliot, John D. Rockefeller Jr., Grace Dodge, Edward L. Keyes, Dr. Snow, and others. Only as the various forces of religion, morals and social consciousness were combined with the medical, public health, education and legal activities did any effective strategy develop. It was agreed that Dr. Snow was the one who could best bring about this interplay and he finally accepted the direction of the American Social Hygiene Association at the occasion of its founding.

The first test of the new social hygiene program was a difficult one, for our entry into the hostilities of 1917 found officials and citizens alike in the belief that the venereal diseases were unavoidable by-products of war. One of Dr. Snow's great achievements was the persuasion of the Secretaries of War and the Navy that this was not the case. His ideas of prevention of infection through education, medical care, wholesome leisure time activities and repression of prostitution were set up, demonstrated and proved during his period of military service. The advances in application of these same principles during the intervening years stand as one of the most dramatic achievements of preventive medicine and social welfare.

Graduated from Stanford University in 1896 with a B.A. Degree in Chemistry, Dr. Snow received the M.A. in Physiology and in 1900 the M.D. Degree. There followed postgraduate studies at Johns Hopkins and other institutions here and abroad. Returning to Stanford, Dr. Snow served as University physician and Professor of Hygiene and Public Health. In 1917 he was appointed by the President of the United States as a member of the National Council of Defense; and served also as Chairman of the Executive Committee of the United States Interdepartmental Social Hygiene Board. He was on active duty with the U.S. Army in the Surgeon General's office and with the American Expeditionary Forces, in charge of venereal disease prevention measures from 1917-19, retiring with the rank of Colonel.

Having been State Health Officer of California (1908-14) and President of the State and Provincial Health Authorities (1912-13), he became chairman of the League of Nations Committee to Study Traffic in Women and Children (1924-28). Later he was President of the National Health Council, lecturer on preventive medicine at Johns Hopkins, New York University and Columbia University. He was a special consultant for the U. S. Public Health Service after 1936, and during World War II was a member of the Government's Interdepartmental Venereal Disease Committee comprising representatives of the Army, Navy, Public Health Service and other Federal agencies.

Dr. Snow was a member or a Fellow of many organizations such as the American Public Health Association, the American Medical Association, National Education Association, the New York Academy of Medicine and the American Association for the Advancement of Science.

He belonged to that distinguished group of far-sighted men who did so much for human good at the turn of the century—Welch, Biggs, Farrand and the others of that glorious company.

Aphorisms

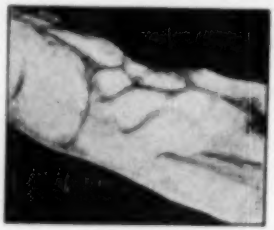
Truths and Concepts Pertaining to the Gastro-Intestinal Tract

Andrew M. Babey, M.D.
Brooklyn, N. Y.

Editor's Note: From a vast field of medical literature Dr. Babey has garnered the most striking findings and the wisdom of a galaxy of experienced clinicians. They are arranged under the following headings: Cardiovascular (with which we opened the series in the April issue), Chest (which appeared in the May issue), Genito-Urinary (which appeared in the June issue), Nervous (which appeared in the July issue), Gastro-Intestinal Tract, (which we are presenting here), Blood, Thyroid, and Miscellaneous. They constitute for the practitioner a comprehensive post-graduate course whose value can hardly be overestimated.

1. "A patient with acute gallbladder disease may complain of pain on breathing. Traction on cystic duct brings on grunting respiration."—W. Smith.

2. "In a very thin patient we may see



Visible peristalsis in a thin patient

visible peristalsis in the abdominal wall."—Richard Cabot.

3. "A barium meal for carcinoma of oesophagus should not be accepted as negative evidence."—George Holmes, Cabot Case Records, *Boston Med. Surg. Jour.*, Nov. 13, 1924, p. 948.

4. "With iodides people sometimes develop pain in parotid from inability of ducts to transport excess juice produced."—R. Cabot.

5. "It is a point worth noticing that people when they get older sometimes lose a lot of weight in quite a short time without there being any reason which we can call pathological."—Richard Cabot, Case 7221, *M. G. H.*, 1921.

6. "Diarrhea in older people after several weeks in bed frequently is due to fecal impaction. Pain is unusual."—R. Cabot.

7. "Dullness in the region of the spleen can be produced by so many other things that we no longer pay any attention to it unless we feel the edge of the organ."—Richard Cabot, *Case Records of M.G.H.*, February 6, 1923, #9062.

8. "After studying thousands of digestive cases, I am thoroughly convinced that the estimation of the acidity of gastric contents is one of the most inadequate and undependable tests from a diagnostic standpoint. I do not recommend its elimination but I unhesitatingly advise caution and reserve in regard to its diagnostic value."—Ernest Gaither, *New Orleans Med. & Surg. J.* 86:1933, p. 79.

9. "The passage of a small amount of flatus does not rule out a diagnosis of in-

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Dr. Babey, one time Bowen scholar of the New York Academy of Medicine (research Guy's Hospital, London) is now attached to the attending staffs of the Brooklyn and Kings County hospitals and to the teaching body of the Long Island College of Medicine, now a division of the University of the State of New York, and is the editor of this journal's Book News.

testinal obstruction, because with obstruction of the small intestine there may be gas discharged from the large intestine below the site of obstruction."—Lincoln Davis, *Case Records of M.G.H.*, June 26, 1923, #9263.

10. "The appearance of hiccup (post-operatively) is always disquieting as suggesting either peritonitis or renal insufficiency."—Hugh Cabot, *Case Records of M.G.H.*, January 2, 1923, #9013.

11. "It is the rule for post-operative peritonitis to be present without spasm, rigidity, distension, etc."—Richard Cabot, #9093.

12. "I have never seen bleeding from uncomplicated diverticulitis and from a study of the pathological specimens there is no reason to expect bleeding. When it does occur in a patient with diverticulitis it may come from hemorrhoids, polyps or from an associated carcinoma."—Merrill Sosman, *New Eng J. Med. 211*:621, 1934.

13. "It is always a bad sign when patients have chills in appendicitis. It means the process is extending. I am always afraid of the possibility of a pyelophlebitis by infection travelling through the mesentery when there have been a number of chills."—Lincoln David, *Cabot Case Records, Boston Med. & Surg. Jour.*, June 12, 1924, p. 1042.

14. "Diverticulitis shows itself in one of three ways:

1—The symptoms of acute abdominal emergency (left-sided appendicitis).

2—It grumbles along forming fibrous tissue until there is a stricture and the symptoms that go with stricture of the sigmoid.

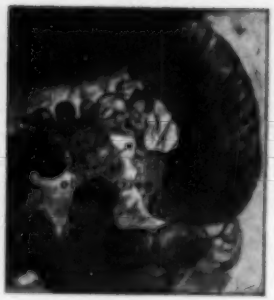
3—Very few symptoms until there is a fistula communicating with the bladder and then the evidence of cystitis and fecal material in the urine or, more commonly, the passage of gas with the urine." — Ed. Young, Jr., *Case Records, M.G.H.*, Feb. 7, 1922.

15. "Hardest thing to tell malignant disease of pancreas from inflammation (at operation). I don't think anybody can tell, it is always a guess."—Lincoln Davis.

16. "As to bleeding from a duodenal ulcer, there are two outstanding points. One is that if operation for hemorrhage is to be undertaken the decision must be made within the first forty-eight hours. The other is, of course, as has been so well demonstrated everywhere, that hemorrhage in patients over fifty years of age is more serious than that in younger patients.

"As regards the first position, it has been shown by Finsterer, Taylor and others, that if operation is performed on patients who are having massive recurring hemorrhages from a duodenal ulcer after forty-eight hours, the mortality will be almost prohibitive. When patients have bled recurrently over a period of two days, even though they are repeatedly given transfusions, they are in no condition to stand major surgical procedures; as a matter of fact, they are usually operated on at this time as a last resort when they are in extremis."—C. M. Jones, *N. E. Journal of Med.*, March 14, 1940.

17. "X-ray evidence of one or more distended loops of small bowel, as shown by a scout film of the abdomen, is the most useful single objective finding in a patient with small-bowel obstruction. The x-ray film should be taken after the stomach has been emptied of its fluid and gas content, and before an enema has been given. This avoids the confusing factors of gas and fluid in the stomach and the possible error due to the instillation of gas and fluid into the colon and its subsequent incomplete evacuation."—W. Osler Abbott.



X-ray of distended loop of small bowel

18. "The most important laboratory aid in the diagnosis of acute pancreatic disease is the determination of the diastase activity of the urine and blood. A report can be rendered within an hour of the receipt of the specimen, so that the test may be utilized as an aid in the speedy diagnosis of acute abdominal conditions. More accurate methods of amylase determination are available, but they are time-consuming and require more equipment and the services of a chemist.

"About ten years ago the important discovery was made that the diastase value usually falls to normal after the first two or three days. It may be elevated for only the first twenty-four hours. A fresh morning specimen of urine or the twenty-four hour amount should be used for the test."—Pratt, *New Eng. J. Med. 222*:47, Jan. 11, 1940.

19. "The diastase test is said to be negative even in the first twenty-four hours of the disease in from 10-20 per cent of cases."—Pratt, *New Eng. J. of Med. 222*: 47, Jan. 11, 1940.

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Declining Deathrate

The perennial plaint by wives about what a rugged life they live, slaving away day in and day out at household chores, doesn't stand up any more. The truth is that the American woman thrives on married life, and here are figures to prove it:

During the past half century, according to Metropolitan Life Insurance Company statisticians, the general health of women, as reflected by prevailing mortality, has improved much faster for the married than the unmarried. The death rate for married women at ages of 20 and over has been cut in half, from 16 per 1,000 in 1900 to 8 per 1,000 in 1948, while for unmarried women—spinsters, widows, and divorcees —the improvement was only two fifths.

Among men the decline in mortality since 1900 has been much less sharp—less than one third for both married and unmarried—with the experience somewhat more favorable for married than unmarried men.

Progress in safeguarding pregnancy and childbirth has played a major part in bringing about the mortality gains of married women, according to the statisticians.

Family Doctors Outnumber Specialists Two to One

Nearly two out of every three physicians in private practice in this country are family doctors.

This is brought out by the American Medical Association's recent count of physicians in connection with its publication of the *18th edition of the American Medical Directory*, according to Frank V. Cargill, Chicago, directory editor.

The new directory shows that the physicians of the United States are in the following classifications: 72,550 are in general practice and 22,976 are in general practice but give some attention to a specialty; 54,891 limit their practice to a specialty; 12,536 are in federal government service; 9,700 are retired or in fields not related to medicine; 3,737 are in administrative, editorial or other executive positions related to medicine, and 24,887 are interns, resident physicians or full time physicians in hospitals.

The previous directory, issued in 1942, listed the number of physicians in the United States as 180,496. In the 1950 edition the number is 201,277, an increase of 20,781 and an average yearly gain of 2,598 during the last eight years.

Current Urological Topics

Ralph U. Whipple, M.D., F.A.C.S.*
Manhasset, New York

It is my intention to present some of the highlights of the recent American Urological Convention held in Washington. I hope that most of the ideas will be of some practical value in daily practice. Some of the material was ultrascientific and I must confess beyond my immediate reach. The latter I shall either skip over or merely mention as an item for one's intellectual background.

Many practitioners have been or will be consulted by the anxious parents of a young son with a congenital hypospadias. Currently the number of operations for the correction of this condition are legion. Most procedures are at least a two stage affair, some are even done in three stages. It is universally agreed that the first step is correction of the chordee, preferably around the age of two years. Most men feel that the subsequent stage or stages should be carried out prior to five years of age so that the youngster may avoid the psychic trauma his schoolmates are sure to shower upon him. Technically best results are achieved if straight suture lines are avoided and tube grafts are taken from portions of skin lacking hair follicles. Some men feel that the new urethra should end at the corona to avoid the possibility of a meatal stricture.

Next I should like to dwell for a moment on the subject matter of urethral strictures, whether inflammatory or traumatic in origin. Gentle urethral dilatation is still the treatment of choice. However, every once in a while an impassable or a tenacious stricture, requiring almost daily dilatations, is encountered. In this situation one of our confrères advocates resection of the strictured area followed by a primary anastomosis of the freshened ends. In my own mind I believe internal urethrotomy followed by a large indwelling urethral catheter for a period of 10 days to two weeks is less radical and merits a prior trial. At this point I am reminded of Dr. Keyes, one of the recent deans of urology, who said "It is bad enough to have gonorrhea without dying from it."

The usual conflicting ideas on the complex psysiology of micturition were once again enumerated. In this connection I should like to mention a new operation presented for the cure of urinary incontinence following surgical procedures on the prostate and in particular transurethral resection. The procedure is one wherein two-thirds of the anal sphincter are split parallel to its fibers. The anterior segment is divided at one end, swung around the membranous urethra and re-sutured to the point of division. In other words a loop from the anterior half of the rectal sphincter acts as the urethral sphincter. The author reports good success with this operation.

An ingenious method of using the cecum and terminal ileum as a substitute bladder and urethra was presented. The continuity of the bowel was re-established by an ileocolostomy; the substitute bladder was made functional by transplanting the ureters. The advantages of this method over transplanting the ureters into the intact bowel are that there is no cross-contamination of bowel contents and urine; the ureters can be catheterized by introducing the cystoscope into the terminal ileum; and lastly the ileo-caecal value rarely permits retro-

* Consultant Urologist: Roslyn Park Hosp. & Brunswick Gen.; Associate Att.: Mercy; Assistant Att.: Meadowbrook; Associate Staff: Nassau, S. Nassau & Manhasset Med. Center.

grade passage so it functions well as a urinary sphincter. The one drawback, however, is that urinary elimination has to be accomplished by self-catheterization.

At this point I think it is the logical time to answer the question "What do you think of cystectomy for carcinoma of the bladder?" by presenting a few statistics emanating from the Massachusetts General Hospital. Several investigators working independently have come to essentially the same conclusion regarding prognosis, namely, the 5 year survival rate is uniformly poor if the lesion has invaded the muscular layers of the bladder. In this group the 5 year survival rate with cystectomy is about 10 per cent. In the same group the 5 year survival rate by all other methods of treatment, i.e., suprapubic resection and fulguration, segmental resection, transurethral resection and fulguration, radon needle implantation and so on, is also approximately 10 per cent. In the second group of growths in which the tumor has not invaded the muscular layers the 5 year survival with cystectomy is only 60 per cent due to the fact that there is a higher initial operative mortality plus the delayed mortality rate due to urosepsis and uremia secondary to malfunctioning ureteral transplants. This same group of growths treated by all other methods have shown a 100 per cent 5 year survival in the hands of the Boston group. Cystectomy offers no better prognosis in the invasive group and decidedly comes out second best in the non-invasive group. In our experience to date we have been well pleased with the results in transurethral resection and fulguration and now feel further encouraged to continue and extend this mode of attack backed by the facts presented in these most recent statistics.

The picture in carcinoma of the prostate is quite different. Here, best results to date are achieved through early recognition followed by total perineal prostatectomy including the seminal vesicles. Unfortunately less than 5 per cent of the cases are seen early enough so it behooves all of us to listen to that oft-repeated phrase about doing routine rectal examinations in all men over 40 years of age. When urinary symptoms become manifest due to this condition, it is too late to consider the patient in terms of cure. Then, palliation is the best we can offer, namely, transurethral resection if obstructive symptoms are present and estrogens to ease metastatic pains and delay the time of final reckoning. Some men prefer castration as well as supplemental estrogens. Currently there is a divergence of opinion whether to initiate estrogens as soon as the diagnosis is made or whether to wait until pain arises due to metastatic bone involvement. In general prostatic CA is slow growing. Most cases survive anywhere from two to five years after the diagnosis is first made. Col. Kimbrough working at Walter Reed reports a 70 per cent cure rate in cases diagnosed and treated early.

While on the subject of doing rectal examinations I should also like to impiore you to carefully check the testicles. It is astonishing how in spite of the easy accessibility of the testicle to palpation, many testicular tumors are missed until relatively far advanced in size and spread. The present 5 year survival rate of seminoma, the most common type of testicular tumor, is about 60 per cent. Other varieties are less common but more malignant. The treatment we employ and prefer is immediate orchidectomy followed by extensive radiation through multiple portals to the peri-aortic abdominal and thoracic glands.

Before my time runs out I should like to mention a piece of research work done on the dissolution of urinary calculi carried out almost simultaneously by two investigators working independently. The preparation is a synthetic amino acid used commercially for cleaning boilers. In a 1 per cent to 3 per cent isotonic solution it has been found to be much less irritating than our previous best medium called Suby solution and in addition it is approximately three times more effective in dissolving stones. It works by binding calcium in a water soluble form. Stone-dissolving techniques present the following problems: (1) it is impossible to tell in advance which stones will respond, (2) many times only the outer crusts will dissolve leaving a refractory core, (3) and it requires con-

stant irrigation with the medium which practically means a bed-ridden patient to keep the tubes in place. This is particularly true in the situation where you are trying to keep ureteral catheters in the ureter. If the patient elects to try a dissolution method, I think it would be well to put a definite time restriction on the procedure, say one week. If no significant progress is noted at the end of that time, other more positive methods of treatment should be relied upon.

Just a few words on anuria, that is, the reversible anurias secondary to transfusion reactions, crush syndrome, metallic poisoning, sulfonamide intoxication, and so on. The artificial kidney is being ballyhooed far and wide but we all know it is a machine of limited practicality and currently being used only in the larger research type of institutions. It requires 24-hour supervision by a staff of nurses, doctors, technicians, mechanics and sundry personnel. Staff members of one large city center say they can thank it for bringing them a large number of cases, cases that were treated by methods available to ourselves, while the machine itself was left unused somewhat in the fashion of a museum piece. Over 90 per cent of these cases with reversible uremia can be salvaged by the judicious use of fluids and electrolytes. The average daily imperceptible loss of fluid in the adult and in the absence of fever, vomiting or diarrhea is approximately 1500 cc. If we limit our fluids to this amount and at the same time try to keep the sodium, potassium, chloride and CO_2 levels near a normal balance, we will be gratified to find that within 8-10 days enough renal repair has been instituted to relieve the anuria. Let us not be completely overwhelmed by machines in this machine age!

Today urologists are taking a more aggressive step in the treatment of polycystic kidneys. They are advocating operation as soon as the diagnosis can be established. The operation consists of rupturing as many cysts as possible and painting the serous surfaces of the larger cysts with a cauterizing agent such as Zenker's solution or strong silver nitrate. It is felt that surgery relieves pain, improves function and prolongs life. The latter has statistical support.

If I may be permitted another minute I should like to mention a diagnostic procedure little used to date in this country, namely, translumbar aortography. This consists of inserting an 18 gauge needle in the aorta and injecting 10 to 12 cc. of 70 per cent neo-iopax as fast as possible and tracing its course with x-ray films. It seems to me its greatest value in urology is in the early diagnosis of renal neoplasms where the growth is confined to the cortex and has not impinged upon the collecting system sufficiently enough to give a distorted pyelogram. It can also give one an idea of the vascular supply of the kidney. This is particularly important in determining pre-operatively whether a damaged kidney merits salvaging. This procedure may appeal to the general surgeons in this group in the situation where you are trying to determine the location of an embolus.

And now in closing may I say that this paper has been somewhat like the modern feminine bathing suit in so far as it has only covered the high spots. I hope they have proven to be of some interest.

Read before the Scientific Session of the Associated Physicians of Long Island held in Westbury, N. Y., on June 13th, 1950.

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Directors of Passano Foundation Announce Dual Award

For the second time in its history, the Directors of the Passano Foundation announce a dual award, the $5,000 cash award for 1950 going to Dr. Edward C. Kendall and Dr. Philip S. Hench, both of the Mayo Clinic, for their chemical investigation of the adrenal cortical hormones, the development of cortisone and its clinical application to the rheumatic diseases.

The Passano Foundation was established in 1943 by the Williams and Wilkins Company, Medical Publishers of Baltimore, Md., to aid in the advancement of medical research, especially that which bears promise of clinical application.

Oxygen Therapy

Arthur M. Suffin, M.D.*
Hempstead, New York

It is astonishing that the status of oxygen, as a therapeutic agent, remained questionable until as late as the First World War, when it was used successfully on soldiers suffering from gas poisoning.

Since that time, oxygen therapy has been scientifically investigated. The delayed recognition of the therapeutic value of oxygen is a result of misconceptions. When it was first used, it was thought to be a panacea. The idea is substantiated by the fact that in 1798, Thomas Beddoes established his "Pneumatic Institute" where oxygen was administered to patients regardless of the cause of their illness. Such unscientific use of oxygen led to its failure in many instances. The early clinical signs of oxygen want were frequently not recognized and oxygen was not administered until after irreparable damage had been done. There are those who have used oxygen, not as a therapeutic help to the patient, but as a means of convincing the relatives that everything possible was being done.

Adequate oxygen therapy means the early administration, by whatever means necessary, of enough oxygen to produce physiologic results. Oxygen therapy is of no value to a patient in oxygen want, unless the concentration of oxygen in the patient's alveoli is sufficient to restore a normal supply of oxygen to his tissues.

The first essential, then, to beneficial oxygen therapy is the early recognition of oxygen want. It cannot be emphasized too strongly that the early recognition of hypoxemia and the early institution of oxygen therapy are essential factors in the securing of good results.

Anoxia, as one usually sees it, develops insidiously and may become quite marked without noticeably disturbing the rate or volume of breathing. It is axiomatic that oxygen want develops into a vicious cycle. Anoxia begets anoxia. The most reliable sign of early oxygen want is pulse rate. As hypoxemia develops, the pulse increases in rate and as it is relieved by excess oxygen, the pulse returns to its original rate. If there is no change in pulse rate with the administration of the proper concentration of oxygen, it may be assumed that the tachycardia is not due to oxygen want. The pulse rate may also be used as a guide to proper time for the discontinuance of oxygen therapy. If oxygen is discontinued and the pulse rate rises, the patient still requires excess oxygen. If the pulse is unaltered, the excess oxygen is no longer needed.

Cyanosis is the obvious sign of hypoxia; cyanosis is merely a visual appreciation of blueness of the capillary blood. Comroe found that in white subjects, with normal amounts of hemoglobin, experienced observers were unable to be certain of cyanosis until the arterial oxygen saturation had fallen to 76 per cent to 85 per cent. This cannot be relied upon, as a sure guide, as it may be absent in patients with severe anemia. A minimum of 5 gms. of reduced hemoglobin per 100cc. of blood must be present before clinical cyanosis may be recognized. This is of clinical importance, since patients who show delirium, tachycardia, dyspnea or insomnia are benefited by oxygen inhalation, even though cyanosis is entirely absent.

* Diplomate Anesthesiology; Chief Anest. Meadowbrook and Mercy; Cons. Southside Bay Shore; Cons. Anest. So. Nassau Community.

When the attending physician decides that oxygen therapy is indicated, he is then confronted with two problems. How severe is the patient's degree of oxygen want, and what percentage of oxygen in the inhaled mixture will be sufficient to overcome the arterial unsaturation? Second, what method is to be selected which will provide the concentration of oxygen desired and be best for the individual patient?

1. NASOPHARYNGEAL CATHETER

4 liters flow.....41% oxygen in inspired air
7 liters flow.....55-65% oxygen in inspired air

2. OXYGEN TENT

10 liters flow.....40-60% oxygen in inspired air

3. OXYGEN BOX (INFANTS)

5-8 liters flow.....Up to 70% oxygen in inspired air

4. OXYGEN MASK

70 to 100% oxygen

The advantage of mask therapy is its ability to provide high concentrations of oxygen economically.

Within recent years, it has become apparent that pure oxygen is not irritating to human pulmonary epithelium, when administered by a mask, for two days and in all probability for four days.

Possibly the removal of the mask from time to time, for food, medication or cleansing, may be the reason for this tolerance.

The question may be asked, "What is the advantage of 100 per cent oxygen?" A normal man, breathing 100 per cent oxygen, will increase his blood arterial oxygen by 10-15 volume per cent. And as Barach points out, since 5 cc. of oxygen is consumed as 100 cc. of blood passes from the aterial to the venous circulation, the addition of 2 cc. of oxygen to each 100 cc. of blood results in a 40 per cent increase in the available oxygen. This additional 2 cc. of O_2 is in physical solution in the plasma. O_2 tension is a property solely of O_2 in physical solution. Hence this 2 cc. of O_2 is all the more readily available for tissue respiration. This becomes of even more importance in the presence of pulmonary disease like edema or pneumonia which decreases O_2 saturation.

I should also like to mention the use of oxygen as an aid in the therapy of abdominal distension. The gas causing abdominal distension is 70 per cent nitrogen.

Fine and his associates in Boston showed that the inhalation of pure oxygen will remove accumulated nitrogen from body cavities and tissues in a comparatively short time.

Oxygen under pressure is used in the treatment of acute pulmonary edema. The application of positive pressure in the alveolus, and thence to the external capillary wall in the alveolus, mechanically opposes the hydrostatic pressure in the capillary and tends to prevent the oozing of serum into the alveolus.

Summary

1. Anoxia is essentially progressive.
2. If the physician begins to use oxygen when he is sure that it is needed, it is frequently too late.
3. The time to begin to use oxygen is before there is any certainty that it is needed.

10 Washington Street

Read before the Scientific Session of the Associated Physicians of Long Island held in Westbury, N. Y., on June 13th, 1950.

Hexamethonium Iodide Effect on Gastric Secretion

Hexamethonium iodide, the hexa derivative of polymethylene-bis-tri-methyl-ammonium series of compounds, has been found to have a potent effect on gastric secretion and motility. The compound was administered intramuscularly in doses of 100 mg. Kay and Smith reported in *Brit. Med. J.* [No. 4651:460 (Feb. 25, 1950)] that a single 100 mg. dose of hexamethonium iodide (C6) produced achlorhydria for as long as 3 hours and that repeated doses effect a substantial reduction in the volume and acidity of the night secretion. The compound also prevents the development of a true insulin response, fails to prevent a histamine response, and produces a prolonged inhibition of gastric motility. The high potency of hexamethonium iodide and its comparative freedom from side effects suggests the use of this compound in the treatment of peptic ulcer.

RESEARCH

Mental Research Yesteryear and Today

Wallace Marshall, M.D.
Two Rivers, Wisconsin

Modern Interpretation of a 200-year-old Theory

We moderns tend to take a great deal for granted. We may become rather complacent and a bit smug in this atomic age. Have we not split the atom? Have we not conquered several diseases, and have we not learned how to prevent the outbreak of plagues which yesteryear used to wreak havoc upon whole continents?

We have learned how to follow a scorched earth policy so that our adversaries will starve in times of war. We can blow up whole cities at will. We can guide deadly missiles for hundreds of miles with fair accuracy. We are amused by the techniques of warfare as practiced when the Constitution roamed the seven seas. We may give the medical knowledge of those times (eighteenth century) very little consideration. We may even consider the intellectual giants of those times unworthy of our scientific attention. We have progressed rapidly since those dim days. But we have not learned to control those tempers and passions which make us human beings and which are the cause of petty jealousies and greed. These are the ingredients which, when mixed properly, lead to mass discontent and finally war.

How can we prevent war when the will to wage it remains? If we were to junk every known weapon, we would still have the possibility of war, because we have not removed the causes. The human mind has not changed an iota throughout the ages. We think and act the same as we have done for centuries. The same dislikes and hates remain in spite of our scientific progress.

What, then, is to be done about this situation before the United Nations becomes a memory as has its predecessor, the League of Nations? We must find some way to direct the minds (or brains) of the peoples of the world, and particularly those individuals who govern, if we are to save civilization.

We must return to fundamentals. These studies should include certainly the attempt to learn just how the brain functions. In other words, we must learn just what occurs when one thinks. If we know the many mechanisms which are involved in such a complicated process, we *may* learn how to control unwanted reactions. To put it another way, we may even learn how to keep certain individuals from becoming asocial. Such a study, as one can see readily, has sociological as well as psychiatric implications.

These topics are not new by any means. Many brilliant scientists, in the past, have given them much thought and consideration. At least they were trying to solve the major problems of their own world and times at the main source of the difficulty—the mind or the brain of the human individual. No United Nations existed to confuse the issue. As we shall see, these old colleagues did well with what they had to work with. Very few contemporary

men of learning are acquainted with these studies. It is really surprising just how much these old scientists knew in spite of their scientific handicaps. Therefore, we may profit if we examine their views on the subject of human behavior before this study was given the scientific names of psychology and its big brother, psychiatry.

Before we delve into the views of the past on this study, let us consider one man who is known to every modern student of chemistry. Everyone has heard the name of Joseph Priestley, but few if any scholars know that he wrote on any subject other than the gases. We all recall that he discovered oxygen (August 1, 1774). Priestley was an intellectual giant with a liberal point of view on most matters which had to do with humans. He was an ardent Unitarian, and later he became a minister of that faith. Because of his "radical" religious views, he was forced to leave England. He found liberty in America and Northumberland, Pennsylvania in 1794. He championed Hartley's theories of the human mind, and we shall now turn our attention to his views on this early study of psychology which he recorded in a book which was published in 1775.*

In the preface of that volume, Priestley wrote: "It has long been the opinion of all the admirers of Dr. Hartley among his acquaintance, as well as my own, that his *Observations On Man* could not have failed to have been more generally read, and his *theory of the human mind* to have prevailed, if it had been made more intelligible; and if the work had not been clogged with a whole system of moral and religious knowledge; which, however excellent, is, in a great measure, foreign to it . . . . . Both these obstacles it is my object in this publication to remove; by exhibiting his theory of the human mind, as far as it relates to the doctrine of *association of ideas* only, omitting even what relates to the doctrine of *vibrations*, and the *anatomical disquisitions* which are connected with it. And it is on these two accounts only that the objection to his theory, as *difficult* and *intricate*, is founded. As, however, I am far from being willing to suppress the doctrine of vibrations; thinking that Dr. Hartley has produced sufficient evidence for it, or as much as the nature of the thing will admit of at present (that is, till we know more of the structure of the body in other respects) I have not thought it necessary scrupulously to strike out the word *vibrations*, or *vibratiuncles* whenever they occured. As the words themselves are sufficiently intelligible, they can occasion no difficulty or embarrassment to the reader. Besides, he may, if he pleases, substitute for them the name of any other species of motion, or impression, to which he may think the phenomena to be explained by them more exactly correspond; and which he may think to agree better with the general doctrine of association, which is, properly speaking, the only *postulatum*, or thing *taken for granted*, in this work. . ."

. . (*Note:* Words in italics so printed in original text.)

Priestley wrote that it was, perhaps, Sir Isaac Newton who first propounded the doctrine of vibrations. Priestley wrote that: "Since all sensations and ideas are conveyed to the mind by means of the external senses, or more properly by the nerves belonging to them, sensations, as they exist in the brain, must be such things as are capable of being transmitted by the nerves; and since the nerves and the brain are of the same substance, the affection of a nerve during the transmission of a sensation, and the affection of the brain during the preceived presence of it, are probably the same.

"What sensations, or ideas, are, as they exist in the *mind*, or *sentient principle*, we have no more knowledge of, than we have of the mind or sentient principle itself. And in this ignorance of ourselves, the business of philosophy will be abundantly satisfied, if we be able to point out such a probable affection of the brain, as will correspond to all the variety of

* Priestley, Joseph: Hartley's theory of the human mind, on the principles of the association of ideas with essays relating to the subject of it. London, Printed for J. Johnson, No. 72, St. Paul's Church Yard, 1775.

sensations and ideas, and the affections of them, of which we are conscious. Ideas themselves, as they exist in the mind, may be as different from what they are in the brain, as that peculiar difference of texture (or rather, as that difference in the rays of light) which occasions difference of color, is from the colours themselves, as we conceive of them."

Priestley goes on with his development of Hartley's theory of the mind. He has written: "Supposing the human mind to have acquired a stock of ideas, by means of the external senses, and that these ideas have been variously associated together; so that when one of them is present, it will introduce such others as it has the nearest connection with, and relation to, nothing more seems to be necessary to explain the phenomena of *memory*."

He goes on to record various propositions in respect to his theory.

1—"The white medullary substance of the brain, spinal marrow, and the nerves proceeding from them, is the immediate instrument of sensation and motion."

2—"The white medullary substance of the brain is also the immediate instrument, by which ideas are presented to the mind: or, in other words, whatever changes are made in the substance, corresponding changes are made in our ideas, and vice versa."

3—"The sensations remain in the mind for a short time after the sensible objects are removed."

4—"Sensations, by being often repeated, leave certain vestiges, types, or images, of themselves, which may be called, simple ideas of sensation."

5—"Any sensations A, B, C, etc. by being associated with one another a sufficient number of times, get such power over the corresponding ideas a, b, c, etc. that any one of the sensations A, when impressed alone, shall be able to excite in the mind b, c, etc. the ideas of the rest."

The foregoing very brief account will give the reader some ideas as to just how Hartley's (and Priestley's) theory is reckoned. Let us turn to the thoughts on this topic as they were expressed by other investigators who followed this work.

Lord Kames* wrote in a similar vein, for he recorded that "nothing external is perceived till first it make an impression upon the organ of sense, is an observation that holds equally in every one of the external senses. But there is a difference as to our knowledge of that impression: in touching, tasting, and smelling, we are sensible of that impression; that, for example, which is made upon the hand by a stone, upon the palate by an apricot, and upon the nostrils by a rose: it is otherwise in seeing and hearing; for I am not sensible of the impression made upon my eye, when I behold a tree; nor of the impression made upon my ear when I hear a song. . . . . ."

He goes on: "A man, while awake, is conscious of a continued train of perceptions and ideas passing in his mind. It requires no activity on his part to carry on the brain; nor can he add any idea to the train."

A footnote explains this stand. "For how should this be done? What idea is it that we are to add? If we can specify the idea, that idea is already in the mind, and there is no occasion for any act of the will. If we cannot specify any idea, I next demand, how can a person will, or to what purpose, if there be nothing in view? We cannot form a conception of such a thing. If this argument need confirmation, I urge experience: whoever makes a trial will find, that ideas are linked together in the mind, forming a connected chain; and that we have not the command of any idea independent of the chain."

Later on, Kames states: "Not a single thing appears solitary, and altogether devoid of connexion; the only difference is, that some are intimately connected, some more slightly; some near, some at a distance." He further explains that: "though we cannot add to the brain an unconnected idea, yet in a measure we can attend to some ideas, and dismiss others."

This materialistic approach to human thinking and behavior upset many skeptics

* Kames, Henry Home of: Elements of criticism: 3rd American from the 8th London Edition. Scott and Seguine, N. Y., 1819, page 29.

who favored a mystic or spiritual approach. Let us witness what the brilliant Doctor John Mason Good wrote on the subject.

"To Hobbes succeeded Spinoza, who was born in the very same year with Locke, and who carried forward the crusade of matter against mind, to so illimitable a career, that he made the world, the human senses, and the human soul, and the Deity himself, matter and nothing else: all one common material being; no part of which can or ever could exist otherwise than it is, and consequently every part of which is equally the creature and the Creator. In the midst of these indiscriminate assaults appeared Hartley, whose learning, benevolence, and piety entitle his memory to be held in veneration by every good man. He strenuously contended for the existence of the mind and matter as distinct principles; and conceived that it was in his power to settle the general controversy, by showing what Locke had failed to do, or rather what he had too much modesty to attempt, the direct means by which the external senses, and consequently the external world, operate upon the mind. And hence arose the well-known and at one time highly popular hypothesis of the association of ideas. It was conceived by Dr. Hartley that the nervous fibrils, which form the medium for communication between the external senses and the brain or sensory, are solid and elastic capillaments, that on every impression of objects upon the senses the nervous chord, immediately connected with the sense, vibrates through its whole length, and communicates the vibration to the substance of the brain, and particularly to its central region, which is the seat of sensation, leaving upon every communication a mark or vestige of itself; which produces a sensation, and excites its correspondent perception or idea. The more frequently these vibrations are renewed, or the more vigorously they are impressed, the stronger will be the vestiges or ideas they induce; and as, in every instance, they occasion vibratiuncles, or miniature vibrations, through the substance of the brain itself, a foundation is hereby laid for a series of slighter vestiges, sensations, and ideas after the primary vibrations have ceased to act. And hence originate the faculties of memory and imagination. And as any order of vibrations, by being associated together a certain number of times, obtain a habit of mutual influence, any single sensation or single idea belonging to such order acquires a power of calling the whole train into action, either synchronously or successively, whenever called into action itself."*

Hartley had recorded what is now the basis of psychoanalysis in these preceding passages. Our readers can note that the association of ideas was not discovered by Freud. The latter merely gave us the technique for recalling painful and hidden psychic material.

Kames goes on with: "Now, according to this system, the brain of a man is a direct sensitive violin, consisting of musical strings, whose tones go off in thirds, fifths, and eighths, as regularly as in a common fiddle, through the whole extent of its diapason; and the orator who understands his art, may be said, without a figure, to play skilfully upon the brains of his auditors. The hypothesis, however, is ingenious and elegant, and has furnished us with a variety of detached hints of great value; but it labours under the following fatal objections: First, the nervous fibres have little or no elasticity belonging to them, less so than any animal fibres whatsoever; and next, while it supposes a soul distinct from the brain, it leaves no office to perform; for the medullary vibrations are not merely causes of sensations, ideas, and associations, but in fact the sources of reason, belief, imagination, mental passion, and all the other intellectual operations whatever. Admitting, therefore, the full extent of this hypothesis, still it gives us no information about the nature of the mind and its proper functions; and leaves us just as ignorant as ever of the power by which it perceives the qualities of external objects. The

* Good, John Mason: The book of nature. Harper and Brothers, New York, 1835, pages 370-1.

difficulty was felt by many of the advocates for the associate system, especially by Priestley and Darwin; and it was no sooner felt than it was courageously attacked, and in their opinion completely overcome. Nothing was clearer to them than that Dr. Hartley had overloaded his system with machinery: that no such thing as a mind was wanting from the brain or sensory itself: that ideas, to adopt the language of Darwin, are the actual contractions, motions, or configurations of the fibres which constitute the immediate organ of sense, and consequently material things; or to adopt the language of Priestley, that ideas are just as divisible as the archetypes or external things that produce them; and consequently, like other parts of the material frame, may be dissected, dried, pickled, and packed up, like herrings, for home consumption or exportation, according as the foreign or domestic market may have the largest demand for them. And consequently, also, that the brain or sensory, or the train of material ideas that issue from it, is the soul itself; not a fine-spun flimsy immaterial soul or principle of thought, like that of Berkeley or even of Hume, existing unconnectedly in the vast solitude of universal space, but a solid, substantial, alderman-like soul, a real spirit of animation, fond of good cheer and good company; that enters into all the pursuits of the body while alive and partakes of one common fate in its dissolution."

My readers will now note the influences of Hartley and Priestley in the following quotation from Conolly.* "It is by the senses alone that we hold any communication with external nature; or with living objects. It is by the senses of others and by our own that we communicate our thoughts and feelings to others. Their loss breaks our connexion with our fellow creatures; is the loss of a portion of our life. If we are with a deaf person, we seem separated from him by an almost impassable partition, if with one who is blind, an impervious curtain seems interposed between us; if with those whose exclusion of sense is greater, as with those both blind and deaf, we can but faintly discern the mind which is so helpless and unimproved; its identity with our own is obscured; so different are its thoughts and feelings from our thoughts and feelings, or so difficult is the mutual communication of them."

Later in his volume, Conolly† touches on the value of the senses in the matter of learning, for he writes that: "the faculties of uneducated people, and particularly of the lower order, who are neither instructed by precept nor observation, are so little used, as to be incapable of many kinds of mental exercise. They suffer daily the same inconveniences, for want of power to connect causes and effects. Even their senses are so unskilfully employed and unimproved, that we cannot always depend on what they believe they have seen with their eyes, or heard with their ears. It was erroneously said by the advocates of the belief in witchcraft, that in matters of *fact* or of *sense*, the vulgar were equal to the wise, though inferior in matters of *theory* or reason. The truth is, that they are inferior in both, and the inferiority arises in both cases from the same cause:

'Our very eyes
Are sometimes, like our judgments,
blind.' "

So much, then, for Hartley's theory and the teachings of the great Priestley. Somehow or other, these studies have been lost, for few modern philosophers even mention them. Nor do the psychologists or psychiatrists.

Some years ago, the writer, who was not then acquainted with Hartley or Priestley's basic work, evolved a psychological theory, which, in the light of these men's work, was, in reality, a modernization of their basic concepts. What ever became of the theory, you may ask? Well, some papers were published in various psychological and psychiatric journals. The theory was discussed by Dr. Smith Ely Jelliffe, who

* Conolly, John, M.D.: An inquiry concerning the indications of insanity. Printed for John Taylor, bookseller and publisher to the University, London, 1830, pages 94-5.

† Ibid., page 99.

saw no reason not to accept it. Furthermore, the writer presented the theory at an annual meeting of the American Psychological Association. Quite a bit of discussion followed the reading of my paper. No one offered any convincing reason which would condemn it, but it was not generally approved because it reasoned mainly through analogy.

To the writer, such an argument is absurd, for all comparative work, such as that done with experimental animals, is analogous, in the final analysis.

We can recall the quotation offered the author by the great Smith Ely Jelliffe, when he cited Solomon who said "there is nothing new under the sun." Let me summarize this theory of psycho-allergy for the benefit of my readers, who then can take note as to its similarity with the teachings of Hartley and Priestley.

Afferent sensations are conveyed to the cerebral cortex (center of learning) by the afferent or sensory pathways, through the various senses, i.e., touch, smell, vision, hearing, and taste. We learn mostly through two sensory pathways—sight and hearing.

These sensations seem to be of an excitatory nature and probably are electrochemical in nature. These stimulations are not of equal strength. Some are stronger than others.

The cortical centers, which receive these neurochemical sensations, become sensitized by these perceptions, so that a normal brain which received such sensations is never the same as it was prior to the reception of such impulses. In other words, some degree of learning has taken place as the result of such afferent impulses.

The entire mechanism appears to show many characteristics as found in allergic reactions, in that the brain centers become sensitized to the incoming neural excitations.

A process of oversensitization of certain cerebral centers takes place at times when the incoming neurochemical excitations are excessive in amount. If such a process is allowed to continue, the individual reacts adversely to certain neural stimuli. He experiences a surmenage which discharges these excessive excitations to the autonomic nervous system, in the manner similar to a safety valve.

There are countless clinical examples of such reactions. For example, we say that any individual can become "hipped" on a certain subject. Let us say, for the purpose of discussion, that a person has not been able to meet his income tax payments. He worries about the matter until he cannot sleep. Let any individual mention this subject, and our friend "hits the ceiling." This will be true especially if someone mentions the advisability of raising taxes.

Let us analyze such a reaction. Before this psycho-allergic state became manifest, the individual reacted normally to his environment. In other words, no amount of psycho-allergens (various neural perceptions) bombarded his cortical areas in excessive amounts in order to develop a psycho-allergic state.

However, the notice for tax payments came to his attention. He studied these forms for hours (visual perceptions which traveled to his cortical areas in excessive amounts.) His accountant continually reminded him of his tax payments (auditory psycho-allergens). These cortical centers became over-excited and produced psycho-allergic states.

Once such a psycho-allergic state becomes produced, any slight neurochemical stimulation, by a related psycho-allergen, will produce a great emotional outburst. This is very similar in nature to the person who is sensitized to eggs. If he ingests the smallest amount of the substance to which he has become sensitized, he may experience a terrific allergic reaction. He may become violently ill.

Space does not allow us to delve into this matter further. However, those of my readers who may care to do further reading on this biological approach to the psychology of learning and the psychiatric implications occasioned by oversensitizations through the psycho-allergic mechanisms, should consult the following list of references which are appended below.

Let us never be guilty of not reading what our colleagues wrote centuries ago.

They have so much to offer anyone who will but take the time to read these musty volumes. You may be amazed by the extent of their knowledge and their logical approach to even the problems which confront each one of us these days in our newly found peace on earth. Let us, as physicians, attempt to learn how to control human emotions. If we learn to control these, we might be able to control the outbreak of wars!

He who did well in war just earns
the right
To begin doing well in peace.
—Browning's "Luria"

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6. Pathologic Physiology and the Psychoneuroses. *Northwest. Med.* 37:5, 1938.
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Bank Building

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Synthesis of Active Portion of ACTH Seen As Possible

Recent research should make possible the eventual synthesis of an "active fragment" of ACTH which produces relief from symptoms of rheumatoid arthritis, according to an editorial in a recent issue of the *Journal of the A.M.A.*

Synthesis of ACTH in the laboratory has been considered to be of insurmountable difficulty, owing to the weight of the molecule and the fact that it is protein in nature.

The editorial refers to the work of Choh Hao Li of the Institue of Experimental Biology, University of California, Berkeley, and Norman G. Brink, Melvin A. P. Meisinger and Karl Folkers of the Research Laboratories of Merck & Co., Inc., Rahway, N.J.

Dr. Li obtained fragments of the hormone which retained biologic activity. The three Rahway research chemists recently reported a component or components of ACTH derived from the hormone compound by a laboratory process (peptic digestion), according to the editorial. This substance kept rheumatoid arthritis in remission in two patients previously treated with ACTH and was "clinically active" in a third patient.

"The effect was equivalent to the intact ACTH," the editorial says.

"With the activity of ACTH being confined to a relatively small molecular weight compound, it should be possible eventually to synthesize this active fragment in the laboratory. This, in turn, would free the amount of the drug which could be produced from the number of pituitary glands available."

In further processing of the fragmentary product, the Rahway chemists found it to contain at least seven common amino acids, compounds which serve as building blocks for the body.

"The revelation that the active fragment is composed of a chain of approximately seven amino acids makes commercially feasible synthesis from other than glandular sources a possibility," Dr. Paul L. Wermer, Chicago, assistant to the secretary of the A.M.A.'s Council on Pharmacy and Chemistry, said.

The natural supply of ACTH from pituitary glands of hogs definitely is limited by the source and, as the situation now stands, could never approach the demand.

Doctor of Industrial Medicine Degree Granted

The first degree of Doctor of Industrial Medicine ever awarded has been granted three doctors by the University of Pittsburgh School of Medicine.

The three who were graduated this year from the specialized post-graduate course were Drs. Harley S. Gibbs, Dolor J. Lauer and James H. McDonough.

1949's Fine Health Record

The year 1949 marked the end of a decade of extraordinary improvement in the country's health. Death rates declined during the year for most important diseases. In some instances the reductions were quite substantial and many new low records were achieved.

The death rate in 1949 under 10 per 1,000 was about 2 percent below the previous record of 1948. This achievement is all the more remarkable because of the increase in the proportion of older persons in the population and in view of the protracted heat spell which gripped a large part of the country last summer.

An important contributing factor in the reduction of the death rate to a new low was the absence of any serious epidemic of respiratory disease. The influenza rate was extremely low and the rate for pneumonia showed a sharp decline.

The record for the childhood diseases was also generally favorable. Mortality from diphtheria continued to be very low. Whooping cough registered a new minimum. Deaths from scarlet fever were extremely few. The number of cases and deaths from measles showed little change from 1948. Poliomyelitis was the only disease with a high concentration at the childhood ages to show a large increase in frequency in 1949. Reported cases were the highest on record. However, the increased death rate from this disease had no appreciable effect on the total mortality at the childhood ages.

An outstanding feature of the year's experience was the decline in infant and maternal mortality. The reduction in infant mortality to a new low of about 31 per 1,000 live births is gratifying in view of the continued high level of the birth rate. More than 60,000 infant lives were saved in 1949 alone because of the decline in infant mortality from the level of 10 years ago. The decline in maternal mortality was remarkable. As recently as 1945 the maternal mortality rate was twice the current figure and 10 years ago it was more than 4 times as high.

Tuberculosis also registered a new low in 1949 with a drop of more than 10 percent from 1948. The year's rate was only half of that recorded in 1937. For three years now the pace of the decline in tuberculosis mortality has accelerated, and, if this trend continues, the disease will disappear from the list of major causes of death in this country much sooner than had been expected previously.

The mortality from the chronic diseases of middle and later life, as expected, did not show a marked downward trend. However, there was a small reduction in the mortality from the chronic diseases of the heart, kidneys and blood vessels. The mortality for cancer and diabetes showed a small increase. Altogether the chronic disease picture in 1949 was relatively satisfactory in view of the growing proportion of older persons.

In the aggregate there was a decline of about 5 percent in the accident death rate. A small reduction in motor vehicle accidents was achieved even though motor car use was at peak level. The largest savings proportionately were in other public accidents and in occupational fatalities despite the high level of employment during the year. The death rate from home accidents also dropped in 1949.

The fine health record for 1949 is the fruit of many substantial advances in the fields of medicine, surgery and public health. Perhaps the greatest achievement of recent years, with widespread effects on the mortality picture, is the development of chemotherapy. First sulfa drugs and then penicillin brought sharp reductions in mortality from a great many infections such as the pneumonias, puerperal septicemia, surgical and wound infections, scarlet fever and other streptococcal diseases. Streptomycin has proved particularly effective against certain forms of tuberculosis and aureomycin against whooping cough and virus pneumonia. Other drugs in process of development hold promise of even better control of infections in the future.

Physicians, hospitals and health officers have worked together to make childbearing safer for both mother and infant. More prospective mothers than ever before avail themselves of prenatal care and obstetric practices have greatly improved, largely under the stimulus of efforts organized by the doctors themselves. Noteworthy is the extension and improvement of special services for premature infants which promise to bring a marked reduction in this leading cause of infant mortality.

The use of immunization has continued to make strides. As a result diphtheria and smallpox have been virtually wiped out and mortality from whooping cough has dropped rapidly as immunization against it has become accepted practice.

Early diagnosis of disease has been receiving increased attention, and case-finding programs on a mass scale have grown in recent years. The major effort thus far has been in tuberculosis and the number of x-ray examinations in this country now exceeds 10,000,000 annually. Good progress is being made in extending mass case-finding techniques to heart disease, diabetes, cancer, and the venereal diseases. Workers in the field are attempting, furthermore, to coordinate these efforts so far as practicable so that large numbers of persons may be screened for several conditions during a single check-up. Finding cases in early stages is often conducive to a rapid cure.

Recent years have seen the inauguration of a long-range program for hospital construction. This has been advanced by Federal aid, and the result will be to make first-rate hospital facilities available to areas now lacking them, as well as to add to the facilities elsewhere. Mention should also be made of the medical program of the Veterans Administration which provides hospital and medical care for Veterans on a scale and of a quality much higher than in the past.

Another reason for the continued improvement in national health is that the American people are exceptionally well informed on health matters. This is largely the result of the extensive programs of health education conducted by public health departments, voluntary agencies and school authorities. The popular press has been a powerful aid in health education. As a result, there is wide acceptance of available measures to prevent disease and to detect it early. Health education is having increasing influence on nutritional and dietary habits. It is also an important element in accident prevention. The dissemination of new knowledge on health and disease will remain a powerful weapon in the campaign for better national health.

Recent research in medicine and the basic sciences has played its part in the advance of public health. Peacetime uses of atomic energy have become numerous in the medical field, and have brought advances not only in fundamental knowledge in physiology but also to some degree in the treatment of disease. For example, certain radioactive substances have been shown to be effective against a few specific types of cancer.

In great part, too, the high level of our national health reflects the good economic conditions that have prevailed. Our people, therefore, have obtained more and better medical care, and have been well nourished. Moreover, the development of hospital and medical care insurance plans, largely through the Blue Cross, the Blue Shield, and group plans of the life insurance companies, has increased the amount of medical care received and the numbers treated in hospitals.

The further application of present knowledge of prevention and treatment of disease, as well as the results of new research, will bring added improvement to the health of the nation.

These factors afford a substantial basis for optimism with regard to health conditions in 1950 and after. There is every indication that the life expectancy of our people will continue to increase. Our major efforts from now on need to be concentrated on solving the problems of the chronic diseases which have become the chief cause of premature death.

—From Studies by Louis I. Dublin, Ph.D., Statistician Metropolitan Life Insurance Co.

EDITORIALS

Defeating the Attempted Subversion of Medicine

Medicine's cold war against the political interests entered the hot phase which is to prevail hereafter on June 27, at San Francisco. In every mind and heart the characterization by Dr. Henderson re-echoed with approval and relief, after the weasel words of the past: "A Government which is sick with intellectual dishonesty, with avarice, with moral laxity and with reckless excesses."

One would think that rational administration would have enough to do if it addressed itself to such basic things as slum clearance, an abatement of a grinding poverty due to gross inequities in the social order which breed a communism that is a measure of the Government's own derelictions, better working and home conditions, and particularly the rescue of children from the dire consequences of a vile environment, rather than the demoralization of an American medicine which has made this "the healthiest and strongest nation on the face of the globe," even in the face of past Government ineptitude and worse.

No more pulling of punches as regards "the ambitious men in Washington who would make the American people walk in lockstep under a rigidly controlled, government-dominated economy . . . a comparatively small group of little men whose lust for power is far out of proportion to their intellectual capacity, their spiritual understanding, their economic realism and their political honesty."

Washington Comedy

Some of the bills introduced into Congress in behalf of do-gooders, crackpots and "socialicians" read like burlesques perpetrated by jokers. These legislative grotesqueries appear to be characteristic of our American culture. Will we ever grow up?

A good example of such a bill is S1805, "to authorize grants and loans to Cooperatives and Non-Profit Associations operating medical and hospital care plans for the acquisition, construction and equipment of needed facilities."

Such a deficit-promoting handout as is here implied would not be for the benefit of the public at large, like the Hill-Burton Act, but only for the members of the organizations cited.

The real aim of such a piece of proposed legislation is to set a pattern for federal direction and control over medicine, as an entering wedge for socialization. It would be in the nature of a rehearsal, like Hitler's tryout of weapons and technics in the Spanish War before the great onslaught.

The Bran Syndrome

If by some magic all the bran-containing foods on the market could be eliminated from the American people's diet we are certain that there would be a big drop in the incidence of such conditions as "colitis," appendicitis, diverticulitis, peptic ulcer and the postcholecystectomy syndrome. A little exercise in observation, investigation and common sense is often very rewarding for patient and doctor alike in these circumstances.

The bran syndrome deserves more recognition in our nosology.

It is surprising that this prime factor in gastro-intestinal torment is not taken into account more often; to overlook it is one of the most notable of our clinical stupidities.

The application of common sense in such matters as this is just as important as the ability to perform a Taka-Arata test or to do a gastrectomy—perhaps more so. In the selection of candidates for medical

study this basic quality should be determined by simple, *common sense* means, such as that resorted to by an eminent English physician who, in selecting a member for his London hospital house staff, merely invited the candidate to dine with him. Good breeding rated higher with this physician than familiarity with the deep muscles of the back. We confess for our own part that common sense rates above understanding of the aorist tense in Greek.

Book Control

We yield to no one in regard for good medical books; indeed, for some of them our regard is of the affectionate order. Osler's *Practice* made our early days in medicine actually glamorous. And we have truly fallen in love with others as well.

But there are too many stillbirths among the newborn volumes. There are even monstrosities. The books that used to attempt fatuously to contain all knowledge of a given field of medicine in a "compend" were abortions; happily, they have passed.

Horrible examples of bibliopathology, to coin a term, are afforded by many of the sex books; enough said.

The medical libraries, maintained at great expense, are bursting with useless books; many an *ancient* tome is invaluable; age does not determine these things; Major's *Classical Descriptions of Disease* is more edifying than much of our current literature.

We sometimes hear boasts that a library holds a certain place among institutions of its kind merely by virtue of the number of books on its stacks. This is a common mode of rating importance. Yet half of the books could be discarded without any loss to medicine.

A library could sometimes be defined as an allegedly cultural station wherein stillborn books are given a factitious life.

We need a militant propagandism for book control; in other words, for planned bookhood. The excess book population should be curtailed by bibliographic contraception.

The Lengthening Span of Life

Lenthening of the average life span by medical and scientific advances will mean two or three times the number of men and women over 65 in another fifty years. It is estimated that such additions to the present population will number as many, perhaps, as 28,500,000. The year 2,000 will accordingly see us faced by tremendous problems of medical care and economic adjustment. The politicians, of course, are already figuring on such a new group's political potentiality.

✚

Mercuhydrin by Subcutaneous Injection

A. Koffler and J. Brenner in *New York State J. Med.* [50:323 (Feb. 1950)] report that subdermal injections of Mercuhydrin gave excellent diuresis and minimal pain. A total of 217-2 cc. subcutaneous injections of Mercuhydrin was given to a series of 69 ambulatory cardiac patients. Pain occurred in only 10 per cent of these injections and was thought to be due in some instances to local trauma of a vessel. Some patients experiencing pain were without pain upon subsequent injections. Ninety per cent of these patients experienced no pain and the entire series was free of sensitivity reactions. In no case was the subcutaneous route discontinued.

Diuresis obtained by the subcutaneous injection of Mercuhydrin was reported to be equal to or better than diuresis obtained by the intramuscular route. The subcutaneous route allowed a greater rotation of injection sites. Patients easily learned to administer subcutaneous injections of Mercuhydrin at home, as insulin is self-administered by diabetics, thus reducing the number of clinic and hospital visits.

CONTEMPORARY PROGRESS

SURGERY

Bernard J. Ficarra, M.D., F.I.C.S.*

Parenteral Nutrition with Human Serum Albumin as the Source of Protein in the Early Postoperative Period

A. G. Fletcher, Jr. and associates *(Surgery, Gynecology and Obstetrics,* 90:131, February 1950) report the intravenous administration of human serum albumin in glucose solution to 11 patients who had had major abdominal operations; salt content of the solution was adjusted according to the indications in each case. The albumin and glucose were mixed so as to give 0.2 Gm. nitrogen and 25 calories per kg. body weight in 3000 cc. The administration of this solution was begun on the day following operation and continued for five days. During the period 8 of the 11 patients were maintained in positive nitrogen balance and 3 in nitrogen equilibrium, although both the nitrogen and the caloric intake were less than had been shown in previous studies to be necessary to maintain nitrogen balance when whole or hydrolyzed protein was given by mouth or hydrolyzed protein intravenously in similar groups of patients for the same time. There was an appreciable increase in the amount of albumin in the urine in 5 of these patients during the period of serum albumin administration. The plasma volume was increased in all but one of the 11 patients at the end of the five-day period. Although several of these patients showed a rise in venous pressure, only one developed pulmonary edema, and this was found to be due to the fact that a considerable amount of sodium chloride had "inadvertently" been given intravenously. This was the only patient who showed any ill effects during the period of observation.

COMMENT

One of the greatest contributions to modern medicine and surgery is scientific intravenous alimentation. The value of protein derivatives in intravenous therapy need not be reemphasized. The use of human serum albumin is an approval to the employment of protein most readily utilized by the human body. It will be interesting to await further reports on this method. *B.J.F.*

Parenteral Nutrition in the Surgical Patient as Provided from Glucose, Amino Acids and Alcohol

C. O. Rue and associates *(Annals of Surgery,* 131:289, March 1950) report that at the St. Barnabas Hospital of Minneapolis it has become a routine to give surgical patients in the immediate postoperative period 1000 cc. of fluid slowly over a period of four hours. This 1000 cc. of fluid contains amino acids, 5 per cent, glucose, 5 per cent, and 60 cc. of 98 per cent alcohol; with vitamins B and C; electrolytes are added if indicated. In the later afternoon and evening another 1,000 cc. of fluid is given, supplying 1472 calories in the first twelve hours and maintaining a positive nitrogen balance. On the following morning, the patient is allowed to take food by mouth, but if not enough food is taken, parenteral nutrition is continued as necessary to supply sufficient calories, maintain positive nitrogen balance and satisfy other nutritional requirements. It has been found that a positive nitrogen balance is more easily maintained with the addition of alcohol to glucose and amino acids than when these two nutrients are given alone. In addition the alcohol has a definite sedative action which renders the use of morphine unnecessary in most cases. Clinical studies of patients whose full nutritional requirements have thus been provided in the immediate postoperative period show that they feel better, and are much more easily ambulated early, and that their wounds heal better, as compared with patients on the routine hospital regimen before this routine of parenteral feeding was instituted.

COMMENT

Alcohol as a source of calories has been employed for centuries by men of medicine. Administering alcohol intravenously is a rather new, but not a recent, innovation. In years

* Associate Visiting Surgeon, St. Peter's and Holy Family Hospitals, Brooklyn; Assistant Visiting Surgeon, Kings County Hospital, Brooklyn Cancer Institute, St. Mary's Hospital, Brooklyn.

past it was given intravenously in peripheral vascular diseases. There is no doubt that the use of intravenous alcohol for nutritional reasons is a sound procedure in those patients who can tolerate it. ***B.J.F.***

Experiences with Cardiac Arrest

F. H. Lahey and E. R. Ruzicka (*Surgery, Gynecology and Obstetrics,* 90:108, Jan. 1950) report that 13 cases of cardiac arrest occurred in the operating room at the Lahey Clinic in seven years. Of these 13 patients, 5 recovered, and in the other 8 the cardiac arrest was overcome, but 7 patients died later due to cerebral damage, and one of acute cardiac failure. On the basis of the results in these cases, the authors conclude that in cases of true cardiac arrest, cardiac action must be restored within three and a half minutes if the patient is to recover without cerebral damage. In order to treat cardiac arrest successfully the anesthetist and the surgeon must be on the alert. In most cases the anesthetist will be the first to be aware of cardiac arrest and must notify the surgeon. Cardiac arrest may occur in any type of operation and with any type of anesthesia. In the cases reported, cardiac arrest occurred during a chest operation in 3 cases; an abdominal operation in 4 cases; thyroid operation in 2 cases; sympathectomy, brain operation, laryngoscopy in one case each; and during induction of anesthesia in one case. A planned program of treatment of cardiac arrest is necessary, and the required instruments and drugs should be immediately available. The plan of treatment advocated by the authors consists of:Artificial respiration with 100 per cent oxygen; immediate cardiac massage; drug therapy with procaine and epinephrine; general methods, including intravenous administration of fluid and the Trendelenburg position. The cardiac massage is "the all important step," and should be instituted at once by the surgeon; however, if procaine and epinephrine are immediately available, a cardiac puncture is done for aspiration of blood and injection of the solution; this procedure is not indicated unless the syringes and solutions are ready for immediate use. For artificial respiration with oxygen an unobstructed airway is necessary, and an endotrachial tube must be inserted by the anesthetist, while other procedures are being carried out, if such a tube is not already in use. Artificial respiration may be needed in some cases for hours after cardiac activity is restored; and in other cases for only a few minutes. The epinephrine-procaine solution for intravenous injection contains 0.5 cc. of epinephrine 1:1000 and 9.5 cc. of procaine, 1 per cent; so that both drugs may be given simultaneously, preferably into the antecubital vein; or it may be injected into the heart as noted above. If cardiac activity is slow in returning, epinephrine may be omitted for a time until some degree of automatic cardiac activity returns; but procaine should either be repeated or be given by continuous intravenous drip until the cardiac action is regular.

COMMENT

Every surgeon dreads the experience of having a patient expire on the operating table. Any suggestion, therefore, which aims at preventing such a catastrophe is welcomed. Dr. Lahey's advice as to the management of cardiac arrest is especially welcome. His emphasis on cardiac massage should be remembered as a most important suggestion. ***B.J.F.***

Prolonged Spinal Anesthesia Using Ephedrine Sulfate Intrathecally

R. L. Taylor *(American Journal of Surgery,* 79:369, March 1950) reports the use of ephedrine sulfate added to the pontocaine solution for spinal anesthesia in 300 cases. If crystalline pontocaine was used, 2 cc. of 10 per cent dextrose was employed to dissolve the crystals; the amount of this solution necessary to give the concentration required was drawn into the syringe and 1.5 parts of 10 per cent dextrose added; 30 mg. of ephedrine sulfate were then added to this solution. If 1 per cent pontocaine hydrochloride was used, 1.5 parts of 10 per cent dextrose and 30 mg. of ephedrine sulfate were added in the syringe to the amount of this solution necessary to give the concentration required. In the cases in which this method of spinal anesthesia was employed it was found that the addition of ephedrine sulfate to the pontocaine solution reduced the amount of pontocaine required for adequate anesthesia, and also prolonged the duration of the anesthesia up to two and a half hours. Not more than 10 mg. of pontocaine was used in any case. The complications often seen with spinal anesthesia did not occur as frequently with ephedrine sulfate added to the pontocaine solution. In no case was there a sudden excessive fall in blood pressure; the maximal drop in blood pressure was between 20 and 30 mm., and usually there was a rise in blood pressure such as typically follows injections of ephedrine sulfate. Nausea, vomiting and retching rarely occurred. There were no deaths attributable to the anesthetic; the three postoperative deaths in the series occurred four to thirteen days after operation due to surgical complications. The routine use of oxygen and intravenous solutions was not

necessary with the use of ephedrine sulfate intrathecally, although they were always available. In the dosage used, the ephedrine, in the author's opinion, does not have any anesthetic action, but "potentiates" the action of pontocaine and acts as a vasoconstrictor.

COMMENT

The postspinal headache is often a most distressing complication following surgery. If the addition of ephedrine sulfate diminishes or eradicates this symptom, it is another item in favor of this method. ***B.J.F.***

The Effect of Aureomycin on the Bacterial Flora of the Intestinal Tract of Man. A Contribution to Preoperative Preparation

W. H. Dearing and F. R. Heilman (*Proceedings of the Staff Meetings of the Mayo Clinic*, 25:87, Feb. 15, 1950) report a study of the effect of aureomycin on the bacterial flora of the intestines in patients with various types of intestinal lesions for which surgery was indicated. The patients were given a diet with minimal residue and a mild saline laxative. Aureomycin was given by mouth, the usual dose being 750 mg. four times a day. The effect of aureomycin on the bacterial flora of the intestines was compared with that of sulfasuxidine, sulfathelidine and dihydrostreptomycin also given by mouth. Aureomycin was found to be most effective in removing bacteria from the intestinal tract. The authors recommend that in preparing patients for intestinal surgery, aureomycin should be given in a dosage of 750 mg. four times daily for three or three and a half days. If this dosage causes nausea, this can be relieved in most cases either by giving a preparation of aluminum hydroxide by mouth, or by feeding the patient at the time that the aureomycin is given. Care should be taken, however, in patients with duodenal ulcer, as 2 cases have been brought to the author's attention, not in this series, in which perforation of a duodenal ulcer occurred after aureomycin had been given.

COMMENT

The popularity of primary intestinal anastomosis has been due in a great measure to the antibiotics and the increased knowledge in the method of preoperative management. Aureomycin has been found, by these authors, to be the most effective drug in removing bacteria from the intestinal tract. This knowledge will further enhance the popularity of primary anastomosis as well as assist in avoiding postoperative morbidity. ***B.J.F.***

PUBLIC HEALTH, INDUSTRIAL MEDICINE AND SOCIAL HYGIENE

EARLE G. BROWN, M.D.*

Reinfection and Relapse After Treatment of Early Syphilis with Penicillin

A. G. Schoch and L. J. Alexander (*Archives of Dermatology and Syphilis*, 60:690, Nov. 1949) report a study of 1,105 cases of early syphilis (primary or secondary) treated at a venereal disease clinic with penicillin, five different treatment schedules being used. The observation periods in these cases varied from nine months to three and one half years. Symptoms of infectious relapse (infectious failure) developed in 137 of these patients during the observation period. Study of the serologic titer curves and history in these cases proved, however, that the symptoms were due to reinfection in 80 of these cases, so that infectious relapse occurred in only 57 cases, an incidence of 5.16 per cent. During the first year after treatment, the incidence of reinfection and of infectious relapse was about the same, but during the second year after treatment infectious relapse occurred very rarely, while the incidence of reinfection was about the same as in the first year. Reinfection occurred much more frequently in patients treated originally for primary syphilis than in those treated for secondary syphilis. In a small group of patients with reinfection, the same treatment for the second infection as for the first gave excellent results. These findings show that following adequate treatment with penicillin, the recurrence of symptoms does not necessarily indicate an infectious relapse; if such symptoms occur a year or more after the completion of treatment, they are much more likely to be due to rein-

*Commissioner of Health, Nassau County, N. Y.; Cons. Contagious Diseases, Meadowbrook Hospital, Hempstead, N. Y.

fection. The possibility of reinfection should always be considered, and a careful diagnostic study made.

COMMENT

With the advent of penicillin therapy of early syphilis, the problem of reinfection, superinfection and relapse has assumed much more practical importance than it ever had before. Great difficulty exists, however, in differentiating relapse from reinfection. The Halley-Wassermann criterion of reinfection is used by most clinicians. This specifies that recurrence of findings may be considered as the result of reinfection when the following two factors are present: (1) there must be proof that the patient had syphilis, through darkfield examination and/or positive blood serologic test, prior to the occurrence of the supposed second infection; and, (2) a lesion with the characteristics of a chancre in which spirochetes can be demonstrated must develop, after an interval following treatment, at a site other than that of the primary lesion of the first infection.

E. W. Thomas (Syphilis, Its Course and Management; MacMillan Company, N. Y., 1949, Chapter IV) states that "when a chancre develops in a patient who has had rapid treatment of early syphilis, before the reagin titers have increased from previous levels, the most likely diagnosis is reinfection. This statement is true whether or not serologic tests have become negative following rapid treatment. In all other cases the relationship between the time when infectious lesions appear and the time when increased reagin titers are noted is of no proved value in distinguishing between relapses and reinfections."

According to J. E. Moore (Penicillin in Syphilis, Chas. C. Thomas, Springfield, Ill., 1st edition, 1946, Chapter IX), even under much more rigid standards, as proposed by Stokes, cases acceptable as supposed reinfection are from five to ten times as common as in previous years. ***E.G.B.***

Occurrence and Distribution of Types of C. *Diphtheriae*

M. Beattie (*American Journal of Public Health*, 39:1458, Nov. 1949) reports a study of the types of *C. diphtheriae* found in the State of California from July 1, 1940 to June 30, 1948 (inclusive). In 2,068 cultures during this period, the *mitis* type was isolated in 1,221 (59 per cent), the *gravis* type in 696 (34 per cent) and the *intermedius* type in 151 (7 per cent). In 1231 cultures from persons reported as cases of diphtheria, the percentage of the various types was *mitis*, 56 per cent; *gravis*, 35 per cent; and *intermedius*, 9 per cent. While the *mitis* type was the type isolated most frequently from cases of diphtheria, carriers and persons of unknown status throughout the state, the *gravis* type was found to occur more frequently in the Southern and Central Valley areas than in the Northern or Central Coast areas. The highest incidence of this type was in Los Angeles County, where 51 per cent of the reported cases showed the *gravis* type in the last four years. The incidence of the *gravis* type was also relatively high in the East Bay counties, 31 per cent, but low in San Francisco (5 per cent). No explanation could be found for the failure of the *gravis* type to spread from Los Angeles or nearby East Bay counties to San Francisco. The *intermedius* type was found most frequently in the Central Valley area, but small outbreaks of diphtheria due to this type occurred in three counties in the Central Coast area in 1944 to 1946.

COMMENT

McLeod in 1943 (The Types Mitis, Intermedius and Gravis of Corynebacterium Diphtheriae. Bact. Rev. 7:1-41, 1943) reported that although studies were still very limited, his findings "suggested that gravis diphtheria as it has occurred in Europe has not yet been observed in the United States." The present investigation, which was conducted between July 1, 1940 to June 30, 1948 in the State of California, tends to indicate that the possibility of the importation of the gravis type from Europe with the advent of war had become an actuality. Similar studies in other states would prove of great interest. ***E.G.B.***

Study of Workers Exposed to Talc and Other Dusting Compounds in the Rubber Industry

W. L. Hogue, Jr. and F. S. Mallette (*Journal of Industrial Hygiene & Toxicology*, 31:359, Nov. 1949) report a study of two groups of 20 men each exposed to talc and other dusts in the rubber industry. The first group of men had been exposed to talc dust (hydrous magnesium silicate) in rubber inner tube production for periods varying from ten to thirty-six years; physical examination and chest roentgenograms of these men showed conditions normal for men of their age group living in an urban industrial community. The second group had been exposed to whiting (calcium carbonate), with minor exposure to prophyllite (65 per cent quartz) and talc in rubber-reclaiming operations for periods varying from ten to twenty-five years. Both physical examination and chest roentgenograms showed these men to be normal except in one case in which a diagnosis of pneumoconiosis, stage III, was made. This worker had the highest dust exposure in the two groups, and also gave a history of employ-

ment for five years as a miner. These findings indicate that even prolonged exposure to talc does not produce pathologic changes in the lungs. A review of the literature in which talc has been reported to produce pneumoconiosis shows that the exposure in the cases reported was not restricted to talc alone, but that other dusts, tremolyte, prophyllite and even quartz, were also involved.

COMMENT

The authors discuss findings of two groups of 20 men each, exposed to talc and other dusts in the rubber industry. Their findings substantiate the information found in the literature to the effect that talc dust does not cause pneumoconiosis. One group was also exposed to calcium carbonate and pyrophyllite (prophyllite) as well as talc dust with no noted ill effects, except in one case in which a man, who previously had been employed for five years as a miner, was diagnosed as pneumoconiosis, stage III. Usually pneumoconiosis is not connected with calcium carbonate nor pyrophyllite (prophyllite) dusts, although the Latter contains 63.5 per cent SiO_2. This is the common practice of reporting percentage of combined silica in a mineral; however, this is no indication of the silicosis hazard. There is no free silica in the mineral talc. All silica present is in the combined form which does not cause silicosis. The State of North Carolina recommends a maximum allowable concentration for pyrophyllite talc of twenty-five million particles per cubic foot of air in milling operations, and ten million particles per cubic foot of air in mining operations. ***E.G.B.***

Tuberculosis Clinic Organization and Practice

A. R. Robins *(American Journal of Public Health,* 39:1295, Oct. 1949) states that tuberculosis clinics in New York City are now known as "chest clinics," because the chest x-ray survey of various population groups for case finding in tuberculosis has become an important part of their work. Such chest x-ray surveys are made of recent contacts of infectious cases of tuberculosis, individuals with significant pulmonary symptoms, and population groups with high morbidity and mortality rates. If x-ray evidence of tuberculosis is found, the patient comes under clinic supervision, as do other persons in whom a definite diagnosis of tuberculosis has been made. "Ideally" the only case of tuberculosis suitable for clinic supervision is the arrested case. Actually a number of patients with active disease come under supervision, almost all of whom refuse to enter a hospital or have a period of institutional treatment and have left against medical advice. The more cooperative patients in this group may be benefited by medical care under clinic supervision and the health education that goes with it. The less cooperative patients remain a danger to themselves and to the community and should be compelled to accept treatment or isolation. The majority of patients with tuberculosis under clinic supervision are arrested cases, and the number of such patients is increasing with the expansion of the mass x-ray surveys. Those patients with arrested disease who have been recently discharged from institutions are watched closely and examined at six months intervals for at least five years. If arrested lesions are found in the routine x-ray examination, less rigid supervision is employed as they may have been in an arrested state for years. In case finding by routine x-ray examination, no physical examination nor examination of sputum is done prior to the x-ray examination. But for the patient with tuberculosis who requires supervision, a complete history is taken, physical examination of the chest and sputum examinations are done, with gastric lavage if necessary. A complete x-ray examination is also made, with bronchography and body section radiography if indicated. Complete records of these cases are kept. Every patient in whom a diagnosis of tuberculosis is made is interviewed by a specially trained public health nurse who helps to make arrangements for hospital or other medical care according to the physician's recommendations. Rehabilitation counseling for arrested cases is a new service recently introduced, which will probably become "a basic part" of the program.

COMMENT

The procedure for follow-up of cases, active and arrested, diagnosed in "chest clinics" as outlined by Doctor A. R. Robins, has been generally accepted by health departments as a workable method for the control of tuberculosis. Emphasis upon case finding in tuberculosis in mass chest x-ray programs fails to recognize the value of chest clinics in detecting neoplastic disease of the lungs such as tumors, malignant or benign, glandular involvement due to blood dyscrasias, cardiac anomalies and the beginning of arteriosclerotic cardiac disease. The W. H. O. defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The shift of emphasis from disease to positive health places a challenge upon these "chest clinics," more aptly called "diagnostic chest clinics," in the early detection and diagnosis and prompt institution of treatment not only in tuberculosis but for the increasing incidence of non-tuberculous disease of the chest. ***E.G.B.***

A New Coolant: Its Dermatitis Producing Qualities

J. M. Lynch *(Industrial Medicine and Surgery*, 18:394, Sept. 1949) reports the occurrence of dermatitis after the introduction of a new coolant in the machining processes of a plant manufacturing ball bearings. The proprietary name of the coolant is Lusol®; none of the known ingredients appeared to be primary irritants or sensitizers. But 15 workers exposed to this coolant developed dermatitis, presumably allergic in nature; in 8 of the 15 workers there were hyperemic papulo-vesicular eruptions; in 5 hyperemia with pruritus and a few scattered papules; in 2 hyperemia of the dorsum of the fingers with cracking and fissures, in one of which a dermatophytid type of reaction developed. The period of exposure before onset of symptoms of dermatitis varied from three days to twenty-six weeks, averaging 8.5 weeks. Three of the 15 patients gave a history of dermatophytosis of the feet, which appeared to be active in 2 cases; 2 had a history of folliculitis due to exposure to insoluble cutting oil, one of whom also gave a history of dermatophytosis without recent activity. Six persons were transferred to other work because of the dermatitis; 3 of these were returned to the exposure, with recurrence of the dermatitis after each exposure in 2 cases, and nd recurrence in one case. In 4 workers who remained at work where exposed to the coolant, the dermatitis cleared, apparently cases of true "hardening." Five were transferred to other work for non-medical reasons, and their dermatitis cleared up promptly. In treatment of these cases boric acid soaks and wet dressings were used when vesiculation and acute inflammation were present; in the subacute stages, bland ointments (lanolin or a mixture of boric acid and lanolin) were used; in 3 cases that progressed to the dry eczematoid stage, zinc oxide ointment was used in addition to the bland ointment. The incidence of dermatitis was greater and the dermatitis more severe in the workers using this new coolant than it had been with the insoluable cutting oil previously employed in the same operations. It is important to have new processes and new materials to be employed in a plant evaluated as to health hazard by the medical department, before use, which was not done in this instance.

COMMENT

The writer of this comment is fully in accord with the author's recommendation that the toxicity of all new materials be determined prior to their introduction in a manufacturing plant. Should the product be found to be toxic, protective measures to prevent dermatitis or poisoning among the workers could be devised and introduced, thus averting illness—and on occasions death. ***E.G.B.***

Percorten and Ascorbic Acid In Rheumatoid Arthritis

Percorten (desoxycorticosterone acetate) and ascorbic acid were used in the treatment of 80 patients with rheumatoid polyarthritis by LeVay and Loxton and reported in *Lancet* [*1*:209 (Feb. 4, 1950)]. The The authors used three methods of therapy. In one method the Percorten was given by intramuscular injection in an amount of 5 mg. in 1 cc. of solution followed immediately by intravenous injection of 1 Gm. of sodium ascorbate. The other methods consisted of the intravenous injection of desoxycorticosterone glucoside combined with ascorbic acid and the intramuscular injection of Percorten in oil combined with an aqueous suspension of ascorbic acid in the same syringe. Improvement occurred in each case and in some the improvement was dramatic. In 5 cases of post-traumatic joint disability the results were also excellent. The authors concluded that the site of action of the drugs was peripheral. The results from the latter technique were most rapid and with this method the joint nearest to the site of injection was found to be the first to respond.

In a review in *Clinical Symposia* (March, 1950) a number of other references were given in which a total of 75 cases of rheumatoid arthritis were treated with Percorten and ascorbic acid. In practically all cases a definite improvement occurred, but of varying degree. From these reported results it was concluded that this combined therapy may not be regarded as a cure for arthritis but that it does relieve pain and stiffness and gives the patient a sense of well-being.

Medical BOOK NEWS

Edited by
ANDREW M. BABEY, M.D.

All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn 16, N. Y. When books are sent to us with requests for review, selections for that purpose are promptly made.

I. L. NASCHER
1863 ~ 1944

Classical Quotations

● While the fundamental difference between the young and the old organism must be sought in some essential change in the character of the cell, the fundamental difference between childhood and old age can be summed up in this: *Youth wants to know; age wants to be.*

I. LEO NASCHER

Geriatrics, 1914.

Pediatrics

Supplement to Child Health Services and Pediatric Education. Methodology and Tabulations on Services. Report of the Committee for the Study of Child Health Services, the American Academy of Pediatrics. With the Cooperation of the United States Public Health Service and the United States Children's Bureau. New York, Commonwealth Fund, [c. 1949]. 4to. Various paging. Paper, $3.50.

The study of Child Health Services was conducted by the American Academy of Pediatrics, with the cooperation of the U. S. Public Health Service and U. S. Children's Bureau.

The origins, objectives and highlights of the study are presented in a report called, *Child Health Services and Pediatric Education*. The present supplement to the above mentioned report contains a description of methods. There is also a series of tables with basic data for hospitals, community health agencies and physicians and dentists in private practice.

This second of two volumes completes all of the basic data collected in the study, relative to child health services and pediatric education.

STANLEY S. LAMM

Heart Disease

Electrocardiography. Fundamentals and Clinical Application. By Louis Wolff, M.D. Philadelphia, W. B. Saunders Co., [c. 1950]. Octavo of 187 pages, illustrated. Cloth, $4.50.

Dr. Wolff has written an admirable introduction to the study of electrocardiography, easily the best in its field. The principles underlying the taking and interpretation of tracings are lucidly explained. This volume should be required reading for anyone interested in heart disease. It is to be hoped that Dr. Wolff will add a chapter or two on the arrhythmias, in which case his book will be a complete monograph on the subject and no supplementary material will be needed.

MILTON PLOTZ

Physiology

Textbook of Physiology. By William D. Zoethout, Ph.D. & W. W. Tuttle, Ph.D. 10th Edition. St. Louis, C. V. Mosby Co., [c. 1949]. 8vo. 710 pages, illustrated. Cloth, $4.75.

For a brief and reliable résumé of the facts of physiology, it would be hard to find a book which equals this eleventh edition. It is up to date and stresses many practical points.

ANDREW BABEY

E. N. T.

Fundamentals of Otolaryngology. A Textbook of Ear, Nose and Throat Diseases. By Lawrence R. Boies, M.D. and associates: Charles E. Connor, M.D., Anderson C. Hilding, M.D., Jerome A. Hilger, M.D., John J. Hochhäuser, M.D., *et al.* Philadelphia, W. B. Saunders Co., [c. 1949]. 8vo. 443 pages, illustrated. Cloth, $6.50.

A well written book covering the basic study of otolaryngology. The author recommends it as a text book for the student and physician, but the specialist may well read it with enjoyment and profit to himself. The book covers present day advanced treatment with the sulfonamides and the antibiotics. Both sides of controversial opinions are stated fairly.

GERALD E. PAULEY

—Continued on following page

MEDICAL BOOK NEWS

—Continued from preceding page

Antibiotics

Antibiotics. Edited by George W. Irving, Jr., Ph.D. & Horace T. Herrick. Brooklyn, Chemical Publishing Co., [c. 1949]. 8vo. 273 pages, illustrated. Cloth, $6.75.

This is a compilation of a series of lectures on Antibiotics, by a very select group of investigators in this field. These lectures were given under the auspices of the U.S. Department of Agriculture. Selman Waksman, Chester S. Keefer and René J. Dubos are some of the authors. Included is also a lecture on the antibiotics of the higher plants and on Veterinary Medicine.

The reading matter is free from technicalities, interesting and quite informative.

HARRY APFEL

Surgery

Care of the Surgical Patient, Including Pathologic Physiology and Principles of Diagnosis and Treatment. By Jacob Fine, M.D. Philadelphia, W. B. Saunders Co., [c. 1949]. 8vo. 544 pages, illustrated. Cloth, $8.00.

This is a 500 page volume on the surgical care of the patient, which quite adequately covers the subject of surgical disorders. It is a compilation of material gathered from the literature and the work of a number of individuals. Nearly every angle of treatment other than actual surgical procedures has been incorporated. In some instances the selection and use of the newer drugs is controversial. Symptomatology of most of the surgical diseases and complications is briefly outlined, and the physical signs are sufficiently clear to make the book a useful guide to internes in diagnostic and therapeutic procedures of the surgically ill patient.

JOHN A. TIMM

Urology

Urological Surgery. By Austin Ingram Dodson, M.D. With contributions by Randal A. Boyer, M.D., Douglas G. Chapman, M.D., Fred M. Hodges, M.D., et al. 2nd Edition. St. Louis, C. V. Mosby Co., [c. 1950]. 8vo. 855 pages, illustrated. Cloth, $13.50.

This excellent book, whose usefulness to practitioner and teacher has been proved by the first edition in 1944, has been modernized with additions.

The text is clear; the topography is good. The book is a valuable aid to all who treat urological lesions surgically.

J. STURDIVANT READ

E. N. T.

Hearing Tests and Hearing Instruments. By Leland A. Watson & Thomas Tolan, M.D. Baltimore, Williams & Wilkins Co., [c. 1949, The Author]. 8vo. 597 pages, illustrated. Cloth, $7.00.

In this text the authors have gone into considerable detail about every phase of a branch of research with which the otologist must be familiar if he is to treat adequately and advise the patient with hearing impairment. Although the clinical otologist does not have to understand the highly technical circuits and other phases of electronics, he may at times need a ready reference, and this volume fulfills that need. It is replete with audiograms, illustrations, and word lists. To this we must add a complete discussion of the hearing aid and its proper fitting. This book contains a veritable storehouse of information and indeed a complete bibliography. The doctor will also find the glossary of terms in audiology useful. We recommend this book highly to the physician, as well as to the social worker interested in the problems of the hard of hearing.

SAMUEL ZWERLING

Pediatrics

Child Psychiatry. By Leo Kanner, M.D. 2nd Edition. Springfield, Ill., Charles C. Thomas, [c. 1949]. 4to. 752 pages. Cloth, $8.50.

This is an enlarged second edition of this work, which was originally published in 1935. It has been wholly rewritten.

The book has four parts. The first deals with a history of child psychiatry. The second is basic orientation; the third, clinical considerations. Part four comprises the major portion of the book. It deals with personality problems arising from physical illness, psychosomatic problems and problems of behavior. There is an author and subject index.

The book is simply written and is highly recommended as a useful office text.

STANLEY S. LAMM

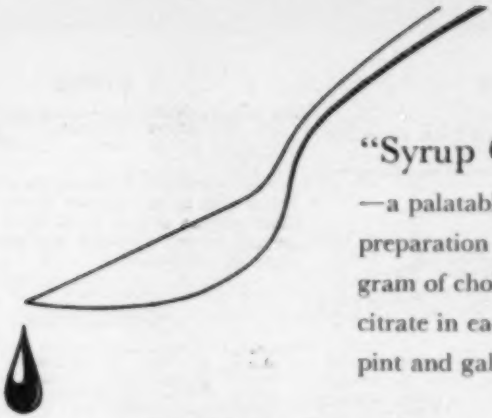
Medicine

Outlines of Internal Medicine. Edited by C. J. Watson, M.D. 6th Edition. Dubuque, Wm. C. Brown Company, [c. 1949, The Author]. 4to. 434 plus 72 pages. Cloth, $12.00.

The latest edition of Dr. Watson's *Outlines* meets the excellence of the previous ones. Information on all subjects has been brought up to date. The conciseness has been maintained. Methods of treatment are specific and detailed. The book is an excellent basic text in Internal Medicine for students and is a fine source for quick review of fundamentals for practitioners.

LEON M. LEVITT

—Continued on page 394



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MEDICAL BOOK NEWS

—Continued from page 392

Therapy

Current Therapy 1950. Latest Approved Methods of Treatment for the Practicing Physician. Editor, Howard F. Conn, M.D. Consulting Editors, M. Edward Davis, M.D., Vincent J. Derbes, M.D., Garfield G. Duncan, M.D., *et al.* Philadelphia, W. B. Saunders Co., [c. 1950]. 4to. 736 pages. Cloth, $10.00.

This new edition of *Therapy* maintains its high standards of reliability and is recommended to all physicians for its brief, sound, reviews of treatment.

ANDREW BABEY

Laboratory

Clinical Pathology. Application and Interpretation. By Benjamin B. Wells, M.D. Philadelphia, W. B. Saunders Co., [c. 1950]. 8vo. 397 pages, illustrated. Cloth, $6.00.

This volume is a useful summary of the principles underlying laboratory procedures and the significance of these procedures. It should prove very useful to students and practitioners alike.

ANDREW BABEY

Writing

The Author Publisher Printer Complex. By Robert S. Gill. 2nd Edition. Baltimore, Williams & Wilkins Co., [c. 1949]. 12mo. 144 pages, illustrated. Cloth, $1.50.

Very few manuals supply the serious medical author with as much sound information in such short compass as this handy work. It is recommended for any physician who plans to write a paper for publication.

ANDREW BABEY

Orthopedics

Handbook of Orthopaedic Surgery. By Alfred Rives Shands, Jr., M.D. in collaboration with Richard Beverly Raney, M.D. Illustrated by Jack Bonnacker Wilson. 3rd Edition. St. Louis, C. V. Mosby Co., [c. 1948]. 8vo. 574 pages, illustrated. Cloth, $6.00.

This third edition has added the many new forms of treatment although briefly described. Practically every phase of orthopedics is discussed even though minimized at times. Illustrations are plentiful, especially in the chapters on congenital deformities, affections of growing, and adult bone infections and tumors of bone. Each condition embraces the etiology, clinical picture, pathology, and treatment. The latter is most abbreviated and one would need to consult some other text for more thorough description.

JOSEPH I. NEVINS

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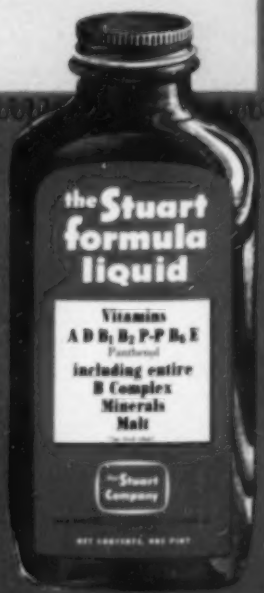

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**Clinical Investigations, Nov. 1945, Page 840—U.S.P. 12 formula.

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Vitamin B_{12} was given to a number of patients with various types of anemia. Eight patients with neurologic symptoms were treated with injections of 40 micrograms a week during the first 6 months and then half this amount during the remaining 9 to 10 months of treatment in this study. The improvement obtained exceeded that expected with liver extract in 4, equalled it in 2, and just fell short of it in 2. In the report by Smith *et al* through *Lancet* (*258:* 353 (Feb. 25, 1950)) it was stated that the response to oral administration of the vitamin was poor since 1,920 micrograms orally in 24 days gave a lesser response than 5 micrograms in a single injection. When 5 micrograms of the vitamin were given orally each day with 50 cc. of unfiltered normal gastric juice for a period of 15 days the response was no greater than that which could be expected from 10 micrograms given in a single injection. A group of 6 patients with negaloblastic anemia of pregnancy were completely unaffected by 65 to 80 micrograms of vitamin B_{12} by injection but 2.5 mg. of folic acid a day cured the anemia and restored normoblastic marrow.

Topical Use of Bacitracin in Aural and Pharyngeal Infections

In a group of 29 patients who had either pharyngeal or tonsillar infections 21 were given lozenges orally each day to a total of 6,000 units of bactracin. The remaining 8 patients acted as controls and were treated with saline gargles only. Coyle, Collins, and Nungester reported in *Arch. Otolaryng.* (50:284(1949)) that a second group of 22 patients, these having aural infections, received into the ear an average of 1.5 to 2 cc. three times

—Continued on page 54a

Clear up PSORIASIS with RIASOL

The remissions of psoriasis are greatest in the summer and 60% of cases show a recession of cutaneous lesions at this season. For this reason it is important to follow-up treatment vigorously and clear up the skin patches before the cold weather sets in.

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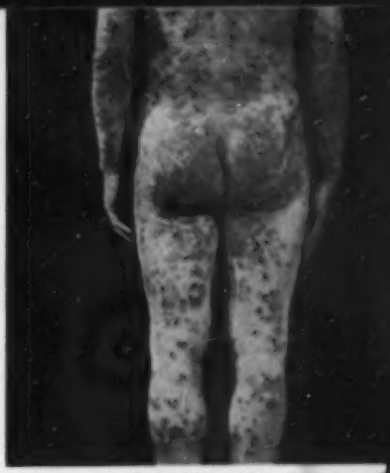

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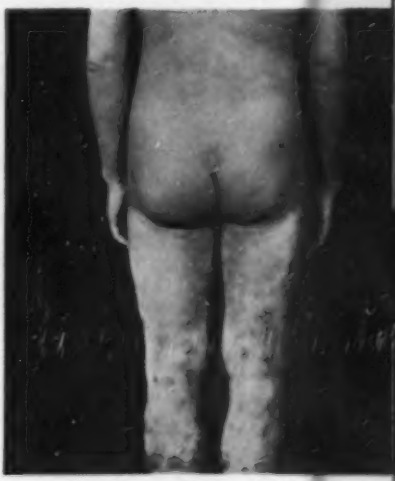

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RIASOL for PSORIASIS

—Continued from page 52a

a day of a solution containing 200 units of bacitracin per cc. Both of the preparations of bacitracin were well tolerated and there were no side reactions in any patient. Of the patients with acute and chronic pharyngitis 70 and 100 per cent of them responded favorably to the drug. Among the patients with infected fenestration cavities the solution was effective in 75 per cent of the cases. However, bacitracin was completely ineffective in cases of chronic suppurative otitis media and in mastoiditis.

Gantrisin in the Treatment of Pneumonia and Urinary Infections

One hundred and twenty of a group of 142 patients, 91 with pneumonia and 39 with urinary infections, were successfully treated with Gantrisin (5-(*p*-aminophanylsulfonamido)-3, 4-dimethylisoxazole). The therapeutic results obtained were similar to those obtained with other sulfonamides. Blood levels of the drug were observed at 3, 6, 9, and 12 hour periods following administration of 6 Gm. orally and found to be 10.7, 9.4, 7.2 and 6.0 mg. per 100 cc., respectively. Following the same dose intravenously the blood levels at 1, 4, and 8 hours after administration were 9.2, 6.2 and 4.1 mg. per 100 cc., respectively. Brickhouse, Lepper, Stone, and Dowling stated in their report in *Am. J. Med. Sci. (218:*133(Aug. 1949)) that the only side effects were hematuria in 1 patient, crystalluria in 1, dermatitis or fever in 5, and nausea in 4. An adequate fluid intake should accompany therapy but alkalies were not given by the authors. The authors recommended the administration of Gantrisin where renal complications must be particularly guarded against.

—Continued on page 56a

—Continued from page 54a

Effects of Chlorophyll in Dental Hygiene

The results of work performed by two research teams J. W. Hein and W. C. Shafer of University of Rochester School of Medicine and Dentistry and G. W. Rapp and B. F. Gurney of Loyola University Chicago College of Dental Surgery revealed that chlorophyll-containing tooth paste (Chloresium) has an effect on dental decay. In experiments with Syrian hamsters, experimentally induced caries were much reduced by the use of a 1:500 solution of chlorophyll in drinking water. Chlorophyll was also shown to reduce the count of *Lactobacillus acidophilus,* thought by many to be a factor in the production of tooth decay. Another advantage of the presence of chlorophyll in dental preparations is its effectiveness in the treatment of pyorrhea, Vincent's infection, and non-specific gingivitis. Experiments conducted also showed that chlorophyll actually deodorizes the mouth. The authors felt that, although much remains to be further investigated, the use of chlorophyll dentifrices has distinct advantages and that their use is going to continue.

Streptomycin Used in Treatment of Rat-Bite Fever

Diagnosis of rat-bite fever in a girl aged 9 was made primarily upon clinical symptoms in the patient, for the diagnosis was made too late to demonstrate the infectious agent in the patient's blood, lymph nodes, or initial lesion. However, the patient identified the mouse genera which had bitten her and *Spirillum minus* was demonstrated in the heart tissue smears of 16 house mice, representatives of the genera which had bitten her, trapped in the fair buildings. According to Jellison, Eneboe, Parker, and Hughes in *Pub. Health Rep.* (64:1661 (Dec. 30, 1949)) strepto-

—Continued on page 58a

MEDICAL TIMES ANTIHISTAMINE Rx SURVEY

95.32% of General Practitioners prescribe antihistamines for hay fever and other allergies.

Because of the concern of physicians and the general public about the use or misuse of antihistamines, MEDICAL TIMES felt that a survey of their use in hay fever and other allergies would be interesting.

The MEDICAL TIMES, therefore, sent the following questionnaire by mail to 4,000 of the nation's most successful General Practitioners selected at random from our circulation lists:

Dear Doctor:

Will you please take a moment to answer a single question for us on a subject of general interest to the profession?

Simply check your reply below and return this sheet to us in the enclosed postage-free envelope. Your signature is not required.

As always, we appreciate the cooperation extended to us by our readers.

Sincerely yours,
MEDICAL TIMES
Joseph J. Walsh
Professional Service Division

Question: Do you prescribe antihistamines for the symptomatic relief of hay fever and other allergies?

☐ Yes

☐ No

The actual addressing and mailing of this questionnaire was handled for us by Fisher-Stevens Service, a nationally-known medical mailing firm. All replies were forwarded, UNOPENED, to the International Business Machines Corporation for tabulation. Their final report follows:

	Replies	Per cent
Yes (do prescribe antihistamines)	1733	95.32
No (do not prescribe antihistamines)	80	4.40
Modified Yes (in above totals)	83	4.56
Modified No (in above totals)	6	0.33
Unclassified (neither answer marked)	5	0.27
TOTAL REPLIES (of 4,000 total mailing)	1818	45.45

The MEDICAL TIMES wishes to take this opportunity to thank those physicians on our lists who were kind enough to take a bit of their valuable time to answer our questionnaire.

—Continued from page 56a

mycin therapy was begun 19 days after the onset of symptoms. The dosage employed was 0.2 Gm. parenterally every 4 hours. After 6 doses the interval was increased to 6 hours and treatment continued for a total of 4 days. Twenty-four hours after treatment was begun the temperature of the patient was normal, having been as high as 105° F. Convalescence was uneventful.

Prevention of Barbiturate Poisoning With Zinc Sulfate

The administration of zinc sulfate to dogs produced emesis even in the presence of barbiturates, according to Miskimon and Miskimon in *Va. Med. Monthly* (77:119 (Mar. 1950)). The administration of 1.5 Gm. zinc sulfate with 1.5 Gm. pentobarbital sodium produced sedation or temporary ataxia-coma but not emesis but, when 5 Gm. zinc sulfate was given with 2.5 Gm. pentobarbital sodium there was emesis in 80 minutes with no sedation. A group of 5 dogs given 8 Gm. zinc sulfate and 4 Gm. pentobarbital sodium had complete gastric emptying in 60 to 80 minutes with no sedation or untoward after effects. The same amount of pentobarbital sodium given later without zinc sulfate produced death in these same dogs within 10 to 12 hours. The authors recommended the inclusion of zinc sulfate in barbiturate preparations in order to prevent deaths.

Effects of Dimercaprol and Parathyroid Extract on the Distribution of Lead

It is known that dimercaprol (BAL) increases the excretion of and alters the distribution of lead in rabbits when the BAL is given less than 24 hours after the administration of lead. The effect of BAL

when given at a later phase and also when combined with parathyroid extract was investigated. A single intravenous injection of lead acetate (2.07 mg. per Kg. Pb) labeled with Pb^{210} was given and then 12.5 mg. of BAL per Kg. was injected intramuscularly twice a day for 4 days ranging from the 8th to the 18th day following the administration of lead. By this time most of the residual lead was found in the bones of the animals. In some of the treated animals 8 units of parathyroid extract per Kg. per day were given for 3 days by intramuscular injection. Adam, Ginsburg, and Weatherall reported in *Brit. J. Pharmacol. Chemotherapy (4*:351 (Dec. 1949)) that the variation in residual lead between identically treated rabbits was greater than the changes attributable to treatment, either with BAL alone or combined with parathyroid extract.

Intrathecal Injections of Penicillin in Dogs

The intrathecal injection of 1 cc. of a distilled water solution of 1,000 I.U. of crystalline sodium penicillin elicited no irritation. However, Bedford found that there was an increase in the cerebrospinal fluid pressure and an increase in the polymorphonuclear leucocytes from 50 to an average of 6,500 per cu. mm. when a like concentration was dissolved in normal saline. The irritation of normal saline alone was evidenced when 1 cc. was injected and there resulted an increase in pressure of the cerebrospinal fluid and an increase in w.b.c. The increase in w.b.c. with isotonic sodium chloride solution alone was on an average of 2,574. Writing in *Brit. J. Pharmacol. Chemotherapy (4*:329 (Dec. 1949)) the author reported that an increase in the concentration of penicillin to 10,000 I.U. resulted in symptoms of irritation in all of the dogs. However, in the 12 dogs in which distilled water was the vehicle only 1 developed general convulsions and in the others the symptoms disappeared within 1 hour. In the 4 dogs in which normal saline was used as the vehicle all 4 had general convulsions. Thus it would appear that normal saline is not a good vehicle for the intrathecal injection of penicillin.

News and Notes

Hospitals Set Record for Peacetime Service

A peacetime record in the number of registered hospitals in the continental United States and hospital service rendered is shown by the 29th annual hospital service report of the Council on Medical Education and Hospitals of the American Medical Association.

An important factor in producing this growth of hospital service reported for 1949 has been the rapid spread of voluntary hospitalization insurance.

Dr. F. H. Arestad, Chicago, associate secretary of the council, and his assistant, Mary A. McGovern, present the report in a recent issue of the *Journal of the American Medical Association*. Their figures reveal that the number of registered hospitals has increased from 6,291 in 1940 to 6,572 in 1949 (6,335 in 1948). The number of patients admitted increased from 10,087,548 in 1940 to 16,659,973 in 1949 and the bed capacity from 1,226,245 to 1,439,030.

Nongovernment hospitals furnish the main portion of hospital service, the report shows. Of the total number of patients admitted in 1949, 12,401,188 were in nongovernment hospitals and 4,258,785 in hospitals operated by the federal, state or local governments.

Course in Postgraduate Gastroenterology

The National Gastroenterological Association, announces that its course in Postgraduate Gastroenterology will be given at the Hotel Statler in New York City on October 12, 13, 14, 1950.

The course, which will again be under the personal direction of Dr. Owen H. Wangensteen, Professor of Surgery, Uni-

versity of Minnesota Medical School, will cover the following subjects: Diseases of the Mouth; Diseases of the Esophagus; Peptic Ulcer; Diseases of the Stomach; Diseases of the Pancreas; Cholecystic Disease; Psychosomatic Aspects of Gastrointestinal Disease; Diseases of the Liver; Diseases of the Colon and Rectum and other miscellaneous subjects including Pathology and Physiology, Radiology, Gastroscopy, etc.

For further information and enrollment write to the National Gastroenterological Association, Dept. GSJ, 1819 Broadway, New York 23, N. Y.

Building Program Announced

Announcement was made recently of an estimated $8,500,000 building program to be initiated this year, calling for the completion of three additional units of the University section of the New York University-Bellevue Medical Center within an 18-month period. Winthrop Rockefeller, chairman, made the announcement, following a meeting of the Medical Center's Board of Trustees, at which it was decided that funds in hand from the current public appeal for the Center were sufficient to initiate the building program. The Trustees also made plans to appeal simultaneously for the balance of the money needed to assure completion of this immediate project.

At the same time, Nevil Ford, Center Trustee, and general chairman of the campaign, announced that James D. Mooney, noted industrialist and executive of the automobile industry, has accepted appointment as Chairman of the newly formed Central Committee of the Medical Center Campaign.

Mr. Ford said that the Central Committee's major objective will be the raising of a balance of $1,800,000 needed for completion of the Main Building to house the Center's two medical schools, the College of Medicine and the Post-Graduate Medical School.

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Federal Income Tax Laws Unfair To Professions, Says Economist

Present federal income tax laws discriminate against physicians and other professional men and women, Frank G. Dickinson, Ph.D., Chicago, economist and statistician of the American Medical Association, points out.

Because a considerable portion of physicians' lifetime earnings are "bunched" into a relatively few peak earning years, they pay more income taxes than other persons who receive the same lifetime incomes spread more evenly over a greater number of years, Dr. Dickinson says in an article in a recent issue of the *Journal of the A.M.A.*

This discrimination in lesser degree applies to a number of other professions, according to the article.

"Under the 1942 Federal Internal Revenue Code," Dr. Dickinson says, "funds used by companies for the purpose of providing employees with pensions or shares in profit-sharing trusts are deductible from gross receipts as business expenses and thus are not a taxable part of the employer's or company's income, if the particular plan is approved by the Bureau of Internal Revenue.

"Since the provisions are restricted to employees, professional men who can qualify as employees—for example, company lawyers and company physicians—can receive the benefits of these pensions and profit-sharing trusts, while those who conduct their professions as single proprietorships or partnerships may not qualify for these benefits.

"The Board of Trustees of the American Medical Association authorized its representatives to record, at a meeting of the Association of the Bar of the City of New York, its support, in principle, of the proposal that the Internal Revenue Code be amended to permit physicians who practice as individual proprietors or partners to declare as business expenses the costs of pension programs for themselves, with the proviso that there should be a reasonable maximum pension.

"The American Medical Association believes that such an amendment would appreciably reduce the present discrimination."

CLASSIFIED ADVERTISEMENTS

Advertisements under the headings listed are published without charge for those physicians whose names appear on the MEDICAL TIMES mailing list of selected general practitioners. To all others the rate is $3.50 per insertion for 30 words or less: additional words 10c each.

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WANTED (Physicians, Assistants, etc.)

ASSISTANT to practitioner. Brooklyn. Box 7A48, Medical Times.

ASSISTANT or partner wanted. Expect to retire within 5 years. Oregon. Box 8A56, Medical Times.

ASSOCIATE for general practitioner. Percentage. Ohio license required. Well equipped office. Box 7A45, Medical Times.

ASSOCIATE in general practice wanted. Am located in middle of Bright Leaf Tobacco section. Money good and work isn't hard. Box 7A46, Medical Times.

AVAILABLE because of death, the general practice of a prominent physician in N. J. industrial town of 125,000. New, well equipped offices. Box 8A59, Medical Times.

COMBINED receptionist and technician for x-ray, EKG & BMR. For G.P.; hours: 12 to 8 p.m., 5 days a week. N.Y.C. Box 8A54, Medical Times.

DESIRE: PSYCHIATRIST, with board qualifications for location in building with other doctors. Opporutnity and hospital facilities excellent. Calif. Personal interview required. Box 7A44, Medical Times.

I WOULD give an active doctor a good deal as an associate. Texas. Box 8A55, Medical Times.

GENERAL PRACTITIONER desires assistant; reasonable starting pay and worthwhile future. Located in nice suburb of Pittsburgh, Pa. Box 7A50, Medical Times.

GOOD TERRITORY for young physician interested in rural practice in Chesapeake Bay area. Opporutnity to step into an established practice. Box 7A49, Medical Times.

OFFICE NURSE: experienced; knowledge of typing; excellent salary. Northern N. J. General practitioner. Box 7A47, Medical Times.

OPHTHALMOLOGIST wanted; to locate in fast growing medical center in prosperous, small, midwestern city. Partnership open to right individual. Box 7A41, Medical Times.

OPPORTUNITY, without salary with F.A.C.P. for study and practice of Gerontology. Object: affiliation. Chicago. Box 7A43, Medical Times.

WANTED: Nurse with, or training for an executive position in a small hospital. Phila. State age, training, marital status, salary desired, etc. Box 8A57, Medical Times.

WANTED: Pediatrician to join established clinic group, Central Okla. Box 8A58, Medical Times.

TYPIST for physician's office wanted. Part time (afternoons). Vicinity of Flushing, N. Y. Box 7A53, Medical Times.

X-RAY TECHNICIAN wanted. Female. Thoroughly experienced. Some knowledge of elementary laboratory work. Doctor's office in N. J. Box 7A51, Medical Times.

YOUNG MEDICAL TECHNICIAN wanted. Female. Part time. Must live in Westchester County. Box 7A52, Medical Times.

WANTED (Equipment, Homes, etc.)

INTERESTED in buying medical gadgets. Instruments of practical value for physical diagnosis or for treatment. Also interested in any ideas along this line. Making a collection. Box 7B7, Medical Times.

WANTED: a second-hand microscope. Will pay a reasonable price. Box 8B9, Medical Times.

WISH TO BUY: Suction & pressure unit in cabinet and May ophthalmoscope in good condition. Give details on make, year and price. Box 8B10, Medical Times.

WANTED (Locations, Positions, etc.)

CERTIFIED in medicine & allergy; married—2 children. Age 42; good health. Experience as medical director of insurance company. Could assist in part-time work with small insurance co. Texas. Box 7C10, Medical Times.

GENERAL PRACTITIONER (interested in pediatrics) for past 9 years, would like to join a medical group in Nassau or Suffolk County. Box 7C9, Medical Times.

DESIRE TO PURCHASE active eye practice near N. Y. C. Will consider partnership. Can make substantial investment. Box 75C7, Medical Times.

—Continued on following page

WANTED (Locations, Positions, etc.)

—Continued from preceding page

PHYSICIAN, 35, married, wishes association with busy surgeon or preceptorship. Has 9 years general practice, 2 year internship. Prefer man within 20 mile radius of Newark, N. J. Box 7C8, Medical Times.

PRECEPTORSHIP or assistantship wanted with either a plastic surgeon or general surgeon or other surgical specialty by 33 year old married G.P. 8 years G.P. Practice successful—but wants to specialize. Box 7C11, Medical Times.

WANTED (Miscellaneous)

WISH TO PURCHASE: Ewing, J., "Neoplastic Diseases," 1940, Saunders; Joseph Needham, "Chemical Embryology," 3 vols., Cambridge. Box 7D7, Medical Times.

FOR SALE (Homes, Sanataria, etc.)

FOR SALE—The finest home in Manteca, the heart of the richest dairy and agricultural country in California. Completed just prior to war, finest materials; three bedrooms so situated that two of the bedrooms could be converted into a beautiful office for doctor, dentist or any professional man interested in combining his office with a very beautiful home.

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Two car garage of pumice brick with a den 10' x 20' opening on to a barbecue and brick patio, 35' x 45'. Grounds are completely landscaped with a sprinkler system throughout.

This community does not have sufficient medical or dental offices and patients are forced to travel as far as 80 miles for consultations.

Owner—E. Volandri, 175 West Alameda Street, Manteca, Cal.

ACTIVE GENERAL practice—4 bedroom, 3 bath house; 6 room office building. Moderate price for real estate only. Small town—near San Diego, Cal. hospitals. Box 8E10, Medical Times.

MIAMI BEACH, Fla. Completely equipped medical office, long established in exclusive section. Ready for immediate practice. Price less than first year's income. Terms. Personal reasons for selling. Would consider Locum Tenens. Box 7E8, Medical Times.

FOR SALE: Medical office bldg. in southern Cal. Non-metropolitan area, in town of about 5,000. Not close to city. Box 7E7, Medical Times.

FOR SALE OR RENT—28 bed, licensed convalescent home on 3 acre tract of land in southern Conn. Excellent retirement income on small income. Details by writing: Box 179, Wallingford, Conn., or Box 7E9, Medical Times.

FOR SALE (Practices)

COMBINED office-residence with general practice for sale in growing L. I. suburban community. Leaving to specialize. Box 7F17, Medical Times.

FOR SALE: Going practice, established 25 years; home and office. Located in Bethlehem, Pa. Pop. 22,000. Box 76E1, Medical Times.

LUCRATIVE general practice for sale. Home and office combination in southern N. J. Wish to leave to specialize. Can stay as long as necessary to introduce. Box 7F16, Medical Times.

PRACTICE FOR SALE: Southern Cal. office leased. Will transfer lease and introduce G. P. in January, 1951. Leaving to specialize. Box 8F18, Medical Times.

WELL ESTABLISHED practice and fully equipped office being offered to qualified M.D. Ill health is reason for leaving present location. Los Angeles, Calif. Phone MA 6-7017 or write Box 7F14, Medical Times.

60% INTEREST in small clinic for sale. Arizona. Box 7F13, Medical Times.

PRACTICE and 1½ yr. old, 23 room medical bldg. for sale. 10 rooms fully equipped. $50,000 industrial, general and surgical practice. Ideal setup for 3-4 man group practice. No.-East Ohio. City of 30,000. Box 7F15, Medical Times.

FOR SALE (Equipment)

CAMBRIDGE portable, string portable electrocardiograph. Excellent condition. $350. N. J. Box 7G37, Medical Times.

COLONIC IRRIGATION table, fully equipped with inlet & drain for plumbing installation. Box 7G35, Medical Times.

FOR SALE: Ruddick peritoneoscope, complete with walnut case—used only a few times—excellent condition—any reasonable offer accepted. Box 7G34, Medical Times.

CARDIOTRON—excellent condition—with Goldberger unipolar leads—reason for selling: restricting practice. Box 76G32, Medical Times.

EKG, basal metabolism, Burdick rhythmic constrictor, radium and accessories, x-ray and all accessories for sale. Going into specialty. Box 76G13, Medical Times.

FOR SALE—$200—Ediphone—complete with dictating & transcribing machine—2 doz. records—excellent condition. Box 8G39, Medical Times.

FOREGGER Australian midget portable anesthesia machine. Six yoke. Waters to and fro filter. Carrying case. Cost when new: $286. Excellent condition. For sale to best offer over $100. Box 8G40, Medical Times.

HIGH COLONIC APPARATUS for sale. Very reasonable. Box 75G23, Medical Times.

PORTABLE Beck-Lee electrocardiograph machine. Excellent condition. $375. Box 8G41, Medical Times.

WAITING ROOM furniture, office equipment, G.M. refrig., gas stove for sale. Ready to start practice. $200. Pennsylvania. Box 7G36, Medical Times.

FOR SALE (Miscellaneous)

16MM. CINE KODAK magazine-type movie camera. New, never used. $150. Cash. Box 7H3, Medical Times.

COPIES of J.A.M.A. available from 1943 through 1949. Box 8H5, Medical Times.

FOR SALE—A.K.C. registered Collie puppies. Prize winning dam—Champion New Aygo Ebony Parade—Sire. $50.00 each. Real value. For early delivery only. Mass. Box 8H4, Medical Times.

FOR RENT (Offices, etc.)

CAL. MED. BLDG., 1401 S. Hope St., L. A., Cal. Sublease 4 rm. suite, lab. and sell G.P. office equipment. Reception room, consultation room, 2 treatment rooms, short wave and infra-red lamps, 2 steel suspension files with locks, 2 typewriters, etc. Sacrifice. No charge for practice. Rent reasonable. Box 7R16, Medical Times.

DOCTOR'S OFFICE for rent—full or part time; large, fully equipped, attractive, good address, Manhattan. Ideal for surgeon, internist or psychiatrist. N. Y. C. Call ATwater 9-0872, or write John Prutting, M.D., 1085 Park Ave., NYC 28, N. Y., or Box 7R17, Medical Times.

DOCTOR'S OFFICE for rent. Two separate rooms and bathroom. Joint waiting room. Excellent parking facilities. Centrally located. Inquire: J. G. Mahol, M.D., 167 Maple St., Springfield, Mass., or Box 7R20, Medical Times.

FOR LEASE—attractive new suites; ground floor location; ultra-modern; all utilities; parking; most reasonable. Los Angeles, Cal. Call HO 9-1359 or write Box 7R19, Medical Times.

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OFFICE TO SHARE, afternoons only. Box 7R18, Medical Times.

VACANCY, suite of 4 rooms. Desirable location for dentist. Joseph Halton Hospital Bldg., Sarasota, Fla. Write Joseph Halton, M.D., at above address, or Box 876R14, Medical Times.

MISCELLANEOUS

H. J. BONNSTETTER, M.D. General practice. AAGP. Kenedy, Texas. Box 7Z5, Medical Times.

W. H. CAMPBELL, M.D., P. O. Box 644, Chickasha, Okla. Office 404 Okla. Nat'l Bank Bldg: Special diseases of women and children. Box 7Z4, Medical Times.

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